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HENRY V. POOR, Editor.

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The *Mechanical Engineering* department of this paper will be under the charge of Mr. ZERAH COLBURN.

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., No. 9 SPRUCE ST.

Saturday, February 4, 1854.

The New Theory of Taxation in Pennsylvania.

The legislature of Pennsylvania has finally repealed the charter of the Franklin Canal; and we presume, ere our paper goes to press, will have taken formal possession of the road.

Whatever may be the complications in which the Erie affair has become involved, there is no doubt that the whole difficulties have their origin in the determination on the part of Pennsylvania *not* to allow a uniform gauge through her north-western frontier upon the line occupied by the Lake Shore road.

The avowed object of the break of gauge, is to benefit Erie; and to check, to use a favorite phrase of our neighbor, "the grasping and unscrupulous ambition of New York." The break it is hoped, will check the current of Western trade in the direction of that city.

To tax commerce has always been one of the favorite modes by which all governments, and all persons in possession of power, have sought to derive a revenue. But however laid, it has always been done with a *show*, or pretence of a compensa-

tion to the *payer*, in the shape of protection, or of some facility or advantage extended to him. The savage chieftain, darting out from his lair, commutes with the unlucky merchant for a right to seize the *whole* property of the latter, who may be well content to give up a part of his merchandize as a price for retaining the remainder. In civilized communities the arbitrary right of the savage is exercised by law, uniform in its operations, and claiming to promote the highest advantages of the whole community. In the latter case, taxes are paid, not so much as a compensation for protection, as for the enjoyment of some privilege by the tax payer, as the use of a road, harbor, light house, etc., etc.; or for the purpose of defraying the necessary charges of government, by which all parties are *equally* benefitted. Such, among civilized States, is the *theory* upon which the right of taxation rests. It is submitted to on the same ground that a merchant devotes a part of his income to the protection and care of his property, or to the education and well-being of his family. He feels that the demands which *society* creates, must be met as certainly as must those of the *individual*; consequently no man complains in paying a reasonable tax, for public purposes, any more than he does in paying for his dinner.

A tax to be cheerfully paid must be of the character described. There must be a *mutuality* in the transaction by which the benefits and the burdens are *shared*. When the benefits and the burdens are not theoretically equal, a tax is *odious*. Such is a tax upon the mere right to *move* property. A person feels that a gross injustice is done him, by compelling him to pay a certain sum for the mere privilege of crossing the boundaries of a town or State. If this sum is levied as a thing due from a person to the *State*, a sum which he pays in common with all his fellow citizens, then the manner in which it is paid becomes immaterial. In theory, at least, he gets his money's worth, and is satisfied.

But to be compelled to pay *without* any equivalent, is felt to be an intolerable burden. In this light were viewed many of the taxes imposed by the several States previous to the confederation. It was felt there was no justice, nor reason, in compelling a person to pay a certain sum for the privilege of driving a flock of cattle, or sheep,

from Connecticut to New York. The mere passing from one to the other did not deprive him of his citizenship. He saw too that by the consolidation of the States, the necessity of transit duties, or imposts levied by each might be obviated, and that the objects for which they were levied might, in a great measure, be superceded; that a *homogeneous* State might be made up of the numerous fragmentary ones, and that by uniting *thirteen* into *one*, the expenses of the whole might, in many important particulars, be reduced in like ratio. To effect such a saving, was, as before stated, the leading motive that lead to the formation of the general government, which both asserted the rights that were previously common to its several members, and expressly prohibited the latter from imposing any burdens upon the commerce *between* the several States; no matter what the objects.

But a privilege which all tradition had shown to be so valuable, was not to be *practically* given up without a struggle. Several of the States sought, at different times, to violate the terms of the compact of the general government, in indirect ways, but in the end were always restrained by the legal tribunals. The decisions of such tribunals had come to command very nearly, not only common consent, but the general approbation and to be followed by almost universal submission to their spirit and letter. The internal commerce of the country was practically free from all burdens, and any charges imposed upon it were designed to promote its advantage.

Railroads were chartered and constructed in view of their adaptation to a system embracing a *whole* country, instead of a State. Local boundaries were entirely disregarded, on the ground that the surest way to advance the greatest good of the *individual*, was to promote the *aggregate* good of all. The lines of our railroads, therefore, pay no attention to the boundaries of the *States*. They are co-extensive with the *whole* country. The different parts of the road from New York to Chicago, are but complements of *one* line. So is the road from this city to Charleston and Savannah. Such should be the fact. The road should correspond to its objects and uses, and as commerce is purely cosmopolitan, so should be its instruments, railroads.

But at this late day a new doctrine is proclaimed, which strikes not only at the existence of commerce, but of all political organization, by destroying the very reasons upon which it is founded. The State of Pennsylvania, through its Governor says: "we interpose ourselves between important sections of the country, and we will turn our position to our own advantage." Direct taxation cannot be imposed. The law against it is too palpable. Imposts, and capitation taxes cannot be levied for the same reason. But ingenuity has found out a new mode of turning the "position" of the State to account; and this is by compelling every pound of produce and of merchandise passing through a portion of the State, to be *lifted from one car to another*, for the purpose of giving employment to a certain number of the population of a feeble and emaciated borough! This is an invention which neither savage cunning, nor civilized rapacity ever dreamed of. These had some respect for *show*; a plausible case, as an apology for plundering, had to be made out to make the thing practicable; the improvement of a highway; the support of some charity, or some institution, the reason of which had long since faded away; perchance to erect a monument to some canonized saint; some excuse of sufficient force to satisfy the public mind, and to give an air of justice to the affair, had always to be put forth. But Pennsylvania has got far beyond such antiquated notions. She assumes to tax the commerce of the country by forcing it to support a few riotous vagabonds, by employing them in transferring freight from one train of cars to another. Such sublime truths in the science of political economy it seems to be her mission to evolve, and of Governor Bigler, to announce to the world.

The discovery is a great one. The past ages present nothing to be compared to it; the present no parallel. Such discovery could not have been made outside of Pennsylvania. She clearly is the inventor, and it is right that she should reap the reward. Let us see what this will be.

The reward will be the employment of a few persons at labor entirely useless, and worse than useless; because a change of freights must always be attended by great destruction of property. All labor expended in transferring freight from car to car, is worse than wasted. It may give employment to a certain number of persons, but commerce could better afford to pension them off, by giving them ten times the amount of their wages, than to suffer the losses that breaks of gauges occasion. No labor is ever *valuable* to the State, that is not *productive*. It would be vastly better for Pennsylvania, and for Erie, that the labor of the citizens should be directed to some *profitable* pursuit, and which would add something to the aggregate property of society. Certainly there is no want of employment, of profitable employment, in this country, at as good or better prices, as will be paid probably by the Railroad Companies at Erie. Why then not have the people of that town pursuing some honest, productive and honorable occupation, instead of aiding them to levy black mail out of the public; a vocation which cannot fail to exert a most disastrous and demoralizing effect even upon the persons so engaged.

We do not think it worth the while to devote much time to the discussion of the expediency

or propriety, of having a break of gauge for the purpose of deviating business from New York and turning it to Philadelphia. It is easy to see that all such measures inevitably recoil upon their authors. The Western people who are chiefly concerned in this matter, will, we have no doubt settle it to suit themselves. The more they are *punished* for not going to Philadelphia, the less will they go there. They will never be *bullied* into trading with that city. As stated in a previous number of our paper, where one dollar is made, ten will be lost to that city by the policy Pennsylvania is now pursuing.

In every point of view is Pennsylvania the loser by a break at Erie, as far as its *direct* results are concerned. But taking it in all its consequences, she must be a tremendous sufferer. She will lose credit both at home and abroad. Her railroad companies will find their securities entirely shut out of the general market. She will be avoided by all the States, whose business she seeks to control, if for no other reason than to retaliate upon her, the injuries they have suffered. Already have her securities suffered a serious depreciation, which is still going on without any apparent limit. The Bonds of the City of Pittsburgh, a city of 100,000 inhabitants, which recently commanded *par*, can be had at 87½, with no sales at that. Much the largest part of this fall is directly due to the Erie riots. If the Bonds of a city like Pittsburgh are so much affected, how will those of a railroad fare? They cannot be sold at all. The only purchasers are the owners of railway property injured by the Erie riots. Pennsylvania in this matter is fighting a battle with the whole world upon her back. Every holder of our American securities is in league against her. They see, if Governor Bigler's doctrine is to prevail, that their property may not be worth a dollar. They will not touch the securities of a State that proclaims and maintains such abominable doctrines. Pennsylvania policy has become as odious among the money lenders of England, Germany and France, as among the farmers of Ohio. Years will not suffice for her to outgrow the blow she has inflicted upon her credit and those of her railroads.

While she has excited such formidable enemies in front, she will raise up others hardly less formidable in her rear. She dictates a policy the most offensive possible to every Western man. If for every pig, or sheep, or every bushel of corn, or barrel of flour, he sends through *Erie*, he is compelled to pay a tax to sustain a rotten borough, the Mayor of which tells us would be ruined without the privilege of imposing such tax, our word for it, he will pay nothing but the *tax*. He will not long pay even the tax. Such foolery will not be tolerated in this country. If Pennsylvania has any wisdom left, she will see this and not provoke the maintenance of a quarrel, her position in which, is most absurd and intolerable.

Ohio and Indiana Railroad.

The Ohio and Indiana Railroad is now completed to Patterson, on the Mad River Road.—West of Patterson, to the Indiana line, the work is being prosecuted with energy, and large quantities of iron (T rail) are now in store at Sandusky and Toledo, for laying the unfinished portion.—The completion of the whole line, from Crestline to Fort Wayne may be looked for in the early part of next season.

McConnell's Locomotives.

The Practical Mechanics' Journal for December, 1853, contains a longitudinal section of McConnell's express Locomotives, upon the London and North-western Railway. Much has been published in regard to these engines, and much has been claimed for the value of the new principles embodied in their construction.

The engines were designed in the expectation of making the distance between London and Birmingham, 112 miles, in 2 hours. To accomplish this the general dimensions and plan of the engines were as follows:

Inside connection; one pair of leading and one pair of trailing wheels. Outside and inside frames, Cylinders 18 inches in diameter; 24 inches stroke; drivers 7 feet 6 inches in diameter; leading wheels 4 feet 6 inches and trailing wheels 4 feet in diameter.

The boiler is 11 feet 9 inches long in the cylinder, and 4 feet 3½ inches in external diameter, the waist and outer firebox being of Bowling iron ¾ inch thick. The firebox is of copper; is 70 inches long on grate. Depth of furnace at door plate 82 inches, and 5 inches less at front plate, or plate next to tubes. Width of grate 48 inches. The furnace is extended within the waist of the boiler 4 feet 9 inches beyond the usual position of the tube sheet, forming a "combustion chamber," surrounded by water. As the combustion chamber is stayed to the waist of the boiler it is not necessary that the circular form should be preserved. The under side is accordingly recessed to give room for the clearance of the cranks. Nine inches are gained in this manner. A "mid feather" is also inserted longitudinally in the furnace. There are 303 brass tubes, 7 feet long and 1½ inches diameter. The pistons are of wrought iron; the springs of india rubber; the leading, trailing and tender axles are tubular. The valve motion is the shifting link. The steam pipe is in the form of a broad flat belt, standing with its flat side opposite the ends of the tubes. Tubular stays are passed through the steam pipes for the purpose of surcharging the steam with the waste heat from the tubes.

The economy of the combustion chamber and short tubes has been strenuously supported, it having been claimed to be equal to a reduction of nearly 50 per cent. taking the same load the same distance. It has been ascertained, however, that the waste heat in the smoke-box is about 1100°, while in ordinary engines it averages only about 600°, thus showing a great waste of heat.

The weight of this engine is 23 tons, (of 2240 lbs.) empty, and 31 tons, or about 69,500 lbs., in running order. The large dimensions of this engine, joined with the unfavorable arrangement of an inside connection, shows the *capacity* of the 4 feet 8½ inch gauge, that of the London and North-western Railroad.

We regard the illustrations of these engines, contained in the Mechanics' Journal, as exemplifying a thorough and first class description of workmanship, rather than any especially useful principle not before used. It is quite well ascertained that with coke, which contains a much greater proportion of carbon than any other fuel, that combustion is practically perfect in ordinary locomotive furnaces. Fuel having an inferior proportion of carbon would therefore be perfectly consumed with a sufficient supply of air. The

use of mid feathers and projecting furnaces, to increase the area of heating surface, is more expensive and less efficient than where the same surface is disposed in the tubes. The great object, we conceive, in the boiler constructed by McConnell, (for which Joseph Harrison, of Philadelphia, obtained a patent in England,) is the means of reducing the height of the boiler with an inside connection. An outside connection would accomplish the same object and afford other advantages of equal importance. Z. C.

Cost of Transportation and Depreciation of Iron on the Western Railroad of Massachusetts.

The cost of carriage of each ton of freight or passenger, per mile, over the Western Railroad in 1852, was 1,402-1,000 cents; there being an equivalent to 46,911,123 passengers or tons of freight carried for that distance. In 1853, carrying 55,638,698 passengers or tons of freight one mile, the cost was 1,399-1,000 cents each.

The number of miles run was 947,382. The expenses of road repairs was 17½ cents per mile run; repairs of Engines 6⅔ cts. per mile run; transportation expenses 42.92 cents per mile.

In regard to the depreciation of iron the statistics in the report of the Directors enables us to gather the following facts. The road from Springfield to Albany, 102 miles, is of a single track. This part of the road was opened through to Albany in 1842, and since 1851 about 36 miles have been relaid with new iron, while it is expected that about 20 miles will require to be relaid each year for the next three years. At the end of 14 years, therefore, from the opening of the road it will have been relaid throughout with new iron. The business over the road is heavy. We are not able to state precisely the business done over this part of the line, but the whole line from Worcester to Albany, 156 miles, and which now has 44 miles of second track, has borne the wear of 8,135,778 miles of running by locomotives, from the first of January, 1842 to November 30, 1853. The number of passengers carried in that time were 4,495,395, of which 362,193 were through passengers between Albany and Worcester. A large part of the way travel was received from the New York City line of roads, the "way" travel having increased over 50 per cent. since 1849, the year of the opening of the New York City line, while the "through" travel has increased only 13 per cent. in the same time. This "way" travel, received from New York, enters the Western road at Springfield, and passes over the 54 miles between that point and Worcester. A movement of freight has been made over the Western road, from January 1, 1846 to November 30, 1853, equal to 1,244,532 tons over the whole length of the road, or equal to 194,137,108 tons moved one mile.

From the results of the working of the Western road it thus appears that a road chiefly of single track, doing a business about as heavy as most first class roads engaged in the same character of traffic, will require to be relaid with new iron every twelve years.

The Report says "the principle adopted in relaying the road, is to remove from a given section all the old rails. Such as are not too much worn serve for temporary repairs on other parts of the line, while those which have become thin, or in any other manner unsafe, are cut up and re-rolled,

as stated in former reports. By this mode of making the renewals, the iron is alike, as nearly as may be, and we have not a new rail interposed between two old or worn out rails."

Effects of Melting on the Strength of Iron.

William Fairbairn, of Manchester, England, who has become celebrated for his researches in the strength of materials, has undertaken experiments, at the request of the British Association, upon the effects of repeated meltings upon the strength of iron.

It has been commonly supposed that iron depreciated sensibly in strength after three or four meltings, but these experiments have shown this opinion to be erroneous. One ton of hot-blast iron was experimented upon; the quantity of coke and flux being accurately noted at each trial. Precautions were taken that the cooling and mode of pouring should be in each case alike, so as not to affect the result. The iron was run into one-inch square bars, and lengths of seven feet were supported on two points and weights applied to the center until the bar broke.

It was found that the strength of the bars increased up to the twelfth melting, after which it rapidly diminished with each successive melting. The breaking weight at the commencement was 403 lbs., and the deflection of the bar before breaking 1¼ inches. At the twelfth melting the breaking weight was 725 lbs., and the deflection 1⅓ inches. At the 13th melting the breaking weight was 671 lbs., at the fifteenth 391, at the sixteenth 363 and at the seventeenth 330 lbs.

In the fracture made after the fifteenth melting there was a bright rim, like silver, surrounding the interior which was of the usual crystalline structure. This bright silvery fracture extended in the sixteenth and seventeenth specimens till it pervaded the mass, which then resembled cast steel.

Are not these results valuable in their application to castings for important purposes, as for parts of steam machinery, car wheels, tires, etc.

Economical Working of Grades.

BY ZERAH COLBURN.

In the last number of the Journal I endeavored to show that the disadvantage of grades was materially influenced, not only by their disposition, but by the capacity of the motive power employed to operate them. The adaptation of locomotives, with reference to the physical features of a line of road, has much effect in the cost of operation; and more with freight than with passenger engines. Leaving out the consideration of the effects of heavy express trains, there is no doubt that concentration of power is the secret of true economy in working a heavy freight, and especially upon an undulating road. The carriage of coal, which demands the greatest economy owing to the relation between the bulk and value of that article, has been reduced on the Reading Road, to the lowest limits of cost, chiefly through carrying maximum trains. The engines on that line, weighing from 55,000 to 60,000 lbs. take a net load of 500 tons of coal, exclusive of cars. The favorable gradient of that road is an important element. With the same grades, engines of but half the power of those in use would draw but one-half

the above load, while the gross expense of running would be fully three-fourths, if not more, for each train moved.

Locomotives only exert their greatest useful power at speeds of from eight to fifteen miles per hour. This range of economical velocity depends upon the dimensions of the engine and the pressure of the steam, but what are usually termed "low speeds" are always the most economical for heavy freight, while there is generally no necessity for moving such freight at anything like passenger train speed. The motive power of those roads whose freight transportation is effected with the greatest economy, is adapted only for low speed, not generally above twelve miles an hour when in motion.

Joined with concentrated power at low speed is the distribution of weight of the engine. An engine of thirty tons weight will not produce much more wear of track than another engine of twenty tons, provided the weight on each wheel is the same. This principle, besides being founded on physical facts, is sustained by the operation of those roads upon which, while the whole weight of the engines has been increased, the weight on each wheel has been kept about the same.

The use of coupled drivers, by which the necessary adhesion is obtained with an economical distribution of adhesive weight, has been carried out to a greater extent in America than in other countries. It is found that the disadvantage of the friction involved in connected drivers is nothing compared with the saving by relieving the track from excessive concentration of weight. The single pair of drivers, an established feature in English engines, has been loaded in that country with from ten to fifteen tons, twelve being a common allowance; and upon passenger engines, moving forty to sixty miles an hour, the effects have been well indicated in the unceasing outcry, on the part of railroad men, of the "destruction of the permanent way."

These principles are applicable to transportation on level roads; while, where the resistances are increased by grades, the engines require to be heavier, the speed slower, and the weight of the engines divided upon a greater number of points.

The working of the Baltimore and Ohio and of the New York and Erie roads shows the application and results of these principles. The grades of the Erie road were given in last week's Journal and the capacity of the Erie engines also, for freight trains, while in the Journal of November 26th, 1853, the dimensions were given in detail for every engine on that road.

The Baltimore and Ohio road has only 4 miles of grades in a distance of 179 miles between Baltimore and Cumberland, in which the rate of ascent is over 40 feet to the mile. On these 4 miles the rise is 82 feet per mile. West of Cumberland there are a succession of 116 feet grades, and for a distance of 33 miles the most part is on grades of from 100 to 116 feet per mile.

The following is a list of the engines of the Baltimore and Ohio railroad, giving their dimensions and weights, heating surface, &c. It was furnished to the writer by Samuel J. Hayes, Esq., the Master of Machinery of the road, and includes the engines contracted for, over and above those on the road. The number of engines on the road, Sept. 30th, 1853, was 167.

EXHIBIT OF MOTIVE POWER, BALTIMORE AND OHIO RAILROAD.

FREIGHT ENGINES.

| Number of Engines of same class. | Diam. of Cylinder. | Length of Stroke. | No. of Drivers. | Diam. of Drivers. | Number of Trucks. | Weight on each Back wheel. | Weight on each Front wheel. | Whole Weight. | Diameter of Boiler. | No. of Tubes. | Diameter of Tubes. | Length of Tubes. | Tube surface. | Fire box surface. | Grate surface. |
|----------------------------------|--------------------|-------------------|-----------------|-------------------|-------------------|----------------------------|-----------------------------|---------------|---------------------|---------------|--------------------|---------------------|-------------------|-------------------|----------------|
| | in. | in. | | in. | | lbs. | lbs. | lbs. | in. | | in. | ft. in. | sq. ft. | sq. ft. | sq. ft. |
| 12 | 12 $\frac{3}{4}$ | 22 | 4 | 35 | 0 | 5,000 | 6,750 | 23,500 | 53 $\frac{1}{2}$ | 400 | 1 1-2 and 1 1-4 | 2 7 $\frac{1}{4}$ | 275 | 26 1-4 | 10 |
| 2 | 13 $\frac{3}{4}$ | 23 $\frac{3}{4}$ | 4 | 35 | 0 | ..... | ..... | ..... | 57 $\frac{1}{4}$ | 375 | 1 1-2 and 1 3-4 | 4 0 | 395 | 37 1-2 | 13 |
| 7 | 17 | 24 | 8 | 33 | 0 | 6,250 | 7,175 | 53,700 | 48 | 211 | 2 and 2 1-8 | 8 4 | 805 | 62 3-4 | 11 |
| 1 | 17 | 24 | 8 | 33 | 0 | 7,306 | 7,687 | 59,975 | 48 | 119 | 2 and 2 3-8 | 12 6 | 802 | 61 | .. |
| 1 | 18 | 20 | 8 | 43 | 0 | 4,850 | 5,625 | 41,900 | 40 | 180 | 2 | 9 0 | ..... | ..... | .. |
| 2 | 13 $\frac{1}{2}$ | 18 | 6 | 43 | 0 | 6,625 | 7,200 | 42,050 | 33 $\frac{3}{4}$ | 94 | 2 | 10 11 $\frac{1}{2}$ | ..... | ..... | .. |
| 2 | 13 $\frac{1}{2}$ | 18 | 8 | 43 | 0 | ..... | ..... | ..... | 36 $\frac{1}{2}$ | .. | 2 | 11 1 $\frac{1}{4}$ | ..... | ..... | .. |
| 4 | 17 | 22 | 8 | 43 | 0 | ..... | ..... | 50,000 | 44 | 142 | 2 1-8 and 2 3-8 | 12 6 | ..... | ..... | 10 1-2 |
| 8 | 17 | 22 | 8 | 43 | 0 | 6,062 | 6,562 | 50,500 | 42 | 103 | 2 1-2 | 13 1 | ..... | ..... | 15 3-8 |
| 2 | 17 | 22 | 8 | 43 | 0 | 5,770 | 6,750 | 50,080 | 43 | 132 | 2 3-16 | 12 0 | ..... | ..... | 11 1-2 |
| 3 | 17 | 22 | 8 | 43 | 0 | 6,032 | 5,795 | 47,310 | 44 | 135 | 2 1-2 | 13 6 | 835 | 57 | 9 8-9 |
| 30 | 19 | 22 | 8 | 43 | 0 | 6,062 | 6,562 | 50,500 | 46 | 103 | 2 1-2 | 13 7 | ..... | ..... | 18 |
| 1 | 20 | 22 | 8 | 43 | 0 | ..... | ..... | 57,200 | 46 | 141 | 2 3-16 | 14 0 | ..... | 83 8-10 | 16 8-10 |
| 85 | 19 | 22 | 8 | 43 | 0 | 8,175 | 7,375 | 54,200 | 46 | 103 | 2 1-2 | 14 1 $\frac{1}{4}$ | 903 | 86 1-2 | 24 1-2 |
| 4 | 20 | 22 | 8 | 43 | 0 | 7,300 | 5,550 | 57,400 | 48 | 134 | 2 | 14 0 | 984 | 87 1-2 | 18 |
| 10 | 17 | 22 | 6 | 50 | 4 | 7,500 | 3,750 | 60,000 | 48 | 134 | 2 1-4 | 14 0 | 1,105 | 71 | 17 1-2 |
| PASSENGER ENGINES. | | | | | | | | | | | | | | | |
| 169 | 17 | 20 | 6 | 50 | 4 | 7,500 | 3,750 | 60,000 | 48 | 134 | 2 1-4 | 14 0 | 1,105 | 71 | 17 1-2 |
| 8 | 10 $\frac{1}{2}$ | 18 | 2 | 50 | 4 | 7,800 | 2,400 | 25,200 | 37 | 78 | 2 | 8 0 | 283 | 45 | 8 |
| 2 | 10 $\frac{1}{2}$ | 18 | 4 | 43 | 4 | 4,839 | 3,000 | 30,550 | 37 | 78 | 2 | 7 11 | 283 | 45 | 8 |
| 2 | 12 $\frac{1}{4}$ | 18 | 4 | 48 | 4 | 5,225 | 3,475 | 34,800 | .. | 125 | ..... | ..... | ..... | ..... | .. |
| 2 | 13 | 20 | 4 | 60 | 4 | 6,337 | 4,250 | 42,450 | 41 | 198 | 1 3-4 | 8 9 $\frac{1}{4}$ | 577 | 52 | 10 3-8 |
| 1 | 12 $\frac{1}{2}$ | 20 | 4 | 51 | 4 | 5,350 | 3,800 | 36,600 | 39 $\frac{1}{2}$ | 107 | 2 | 8 11 | 437 | 44 | 8 |
| 1 | 14 | 18 | 4 | 54 | 4 | 5,600 | 3,925 | 38,100 | 39 | 142 | 2 | 8 0 $\frac{1}{2}$ | 522 | 53 | 10 |
| 2 | 14 | 18 | 4 | 54 | 4 | 5,750 | 4,225 | 39,900 | 42 $\frac{1}{2}$ | 120 | 2 | 9 0 | 495 | 56 | 10 1-2 |
| 2 | 14 | 18 | 4 | 54 | 4 | 5,600 | 3,925 | 38,100 | 39 | 150 | 2 | 8 0 $\frac{1}{2}$ | 553 | 53 | 10 |
| 7 | 13 $\frac{1}{4}$ | 18 | 4 | 60 | 4 | 7,375 | 3,675 | 44,200 | 39 | 133 | 1 3-4 | 9 10 | 599 | 68 | 12 |
| 6 | 15 | 20 | 4 | 60 | 4 | 7,916 | 3,833 | 46,999 | 48 | 151 | 2 | 9 3 $\frac{1}{4}$ | 736 $\frac{1}{4}$ | 82 1-8 | 14 |
| 5 | 15 | 20 | 4 | 60 | 4 | 8,333 | 4,166 | 50,000 | 46 | 151 | 1 3-4 | 11 8 | 778 | 75 1-2 | 10 1-2 |

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The preceding table shows the following facts: 85 of the freight engines are alike, and their dimensions may be, therefore, assumed as a standard. These engines, under an effective pressure of 75 lbs. per square inch of the piston, exert a tractive power of 13,852 lbs. at the rims of the wheels, to balance which the adhesion must be fully one-fourth of the weight of the engine. These engines use 6,772 cubic feet of steam per mile, besides the amount lost in ports and cylinder ends.

There is no such freight engine on the road as one of four drivers and trucks; the old stereotyped plan of New England freight engine.

No engine on the road has over 7,916 lbs. upon a single wheel, except five engines which were built in New England. No freight engine has over 7,500 lbs. on a wheel, and the standard freight engines have but 7,375 lbs. on each of the heaviest loaded wheels.

The standard freight engines are not calculated to run much above twelve miles per hour, and on the ordinary level parts of the road do not carry over an average of 90 lbs. steam.

Five of the freight engines are larger than the standard, having 20 inch cylinders, and weighing 57,400 lbs. One of these has taken a train of 225 tons, 7 miles per hour, on a grade of 116 feet per mile; to do which a tractive power of 15,722 lbs. at the rims of the wheels, or 77 lbs. per square inch of the piston, were required.

The largest number of the freight engines are burning bituminous coal, while many of the passenger engines are being adapted for burning coke.

Over 200 of this stock of engines have cast iron chilled slip tires, or solid chilled driving wheels.

To continue the comparison between the working of the engines of the two roads:

| | B. & O. | Erie. |
|--------------------------------------|--------------------|-------------|
| Diameter of cylinder. | 19 in. | 18 in. |
| Stroke..... | 22 " | 20 " |
| Diameter of drivers.. | 43 " | 62 " |
| Number of do. . . . | 8 | 4 |
| Weight of engine..... | 51,200 lbs. | 63,000 lbs. |
| Greatest weight on one wheel..... | 7,375 " | 10,500 " |
| Tons load with 75 lbs. of steam..... | 1,385 " | 784 " |
| Steam used per mile, cubic ft..... | 6,772 " | 3,958 " |
| Cost of engine..... | \$9,750 | \$10,500 |
| Working speed..... | 12 miles per hour. | |
| Working pressure.... | 90 lbs. | |

In regard to the pressure used, and speed made, on the Erie road, it may be hardly fair for me to state what I know upon that point. The present master of machinery, however, at Piermont has assured me that previous to his coming upon the road, the engineers used often to "wedge their valves," as he believes, to 200 lbs., and furthermore—that, even now, 32 $\frac{1}{2}$ ton freight engines, with their trains, are run down grades at speeds, in some cases, of 45 miles per hour; and that often, in some parts of the Eastern Division, the freight engineers will take and maintain the lead of the express trains, keeping out of the way for several miles on a stretch.

In the last number of the Journal it was stated that owing to the difference in the grades of the Eastern and Delaware Divisions of the Erie road, two or three trains were made up on the former for one for the latter.

Yet, notwithstanding the differences in the resistances on these divisions, there is not a corresponding adaptation of engines to work them. The following table shows the ruling grade of each division, and the steam used per mile, in cubic feet, for the average of the engines marked as "freight engines" in the recent report of the company.

| | Ruling Grade. | Steam used. |
|---------------------------|---------------|-------------|
| Eastern Division..... | 60 feet. | 3,658 |
| *Delaware "..... | 15 " | 3,709 |
| Susquehanna Division..... | 10 " | 3,590 |
| Western "..... | 50 " | 3,931 |

The average for the Eastern Division, which is less than for any other except the Susquehanna includes two engines of the construction and dimensions of the standard Baltimore engine; either of which can haul 25 cars over the division in place of 14 by the other engines. Without regard to this fact, and although the Baltimore engines have cost far less for repairs than most of the others, they have not been used on regular freight trains; simply because they could not run at the speed which has become customary with the freight trains.

The system of divided trains, in which one or two trains are behind another, involves frequent and expensive accidents, often attended with loss of life. "Rear collisions" have become very frequent on the division, and the utmost care cannot prevent them so long as the present system continues.

To do an economical business, the different divi-

*60 feet grades for a few miles, on which assistant engines are used. The consumption of steam per mile of these engines, not included in the average, is 5,849 cubic feet.

sions of the Erie road should have engines adapted to their grades. Concentrated power, distributed weight, absence of dead weight, and low speeds, must be the means by which this shall be accomplished. The road will suffer more than \$150,000 yearly in its future business without such adaptation.

Philadelphia, Wilmington and Baltimore Railroad Company.

We have received the annual report of the president and directors of this company, from which it appears that its business has largely increased during the past year. Its receipts were—for passengers, \$696,618; for freight and express \$120,236 64; for rents, \$13,683 20; for mails, &c., \$37,500—total \$868,037 84. The expenses amounted to \$522,949 82, leaving as the net earnings of the year, the sum of \$345,088 02; in addition to a surplus of \$54,750 67 on hand last year, making an aggregate of \$399,838 69.

In addition to the surplus of \$399,838 69, is to be added the year's receipts of the Newcastle Company, amounting to \$74,430 19—making a sum of \$474,268 83, of which \$105,485 23 has been paid for expenses, including tax on capital and bonus, and interest—leaving a joint surplus of \$368,783 65. Of this sum \$77,000 was paid on the 2 per cent. dividend in April, 1852; \$151,591 66 the 3 per cent. dividend in October, on old and new stock and tax; \$60,000 carried to the renewal funds of the two companies—leaving a surplus, after dividends and renewals, of \$80,191 99.

A comparison of the revenue of both lines, for the year ending Nov. 30th, 1853, with that ending Nov. 30th, 1852, shows an increase in the aggregate of \$182,604 57, while a comparison of the receipts of the Newcastle line for the same period, shows a decrease of \$17,647 52. The increase of revenue on the road from Baltimore to Philadelphia, over 1852, is \$200,252 09.

The whole number of through first class passengers, including through tickets to and from other roads, and passengers between Philadelphia and Baltimore, on the railroad in 1852, 128,428½, paying \$374,512 48; of second class, 8,409, paying \$16,122 87. Total from through passengers in 1852, \$390,635 34. The whole number of first class in 1853, was 177,348, paying \$513,219 80; of second class, 7,736½, paying \$15,217. Total from through passengers in 1853, \$528,436 80, showing a gain of \$187,801 46 in the through travel, including that between Philadelphia and Baltimore, by railroad, as compared with the year before.

The whole number of way passengers, by the railroad line, in 1852, was 251,918½, paying \$132,129 48. In 1853, the number was 331,578½, paying \$168,181 20, showing a gain in receipts from way travel of \$36,051 72, and a gain in numbers of 79,660 passengers.

Sufficient iron has been purchased, with the amount on hand, to lay fifteen miles of double track from Philadelphia to Wilmington, and this work will be continued from year to year, until there is a double track all the way to Baltimore. At present the road is in a high state of repair and efficiency. The construction of the bridge across the Susquehanna, at Havre-de-Grace, will be pushed forward with all practicable speed. A reduction of fare between New York and Washington, and New York and Baltimore, simultaneous with a reduction between Philadelphia and Balti-

more, has been unsuccessful, but it is anticipated that the various roads concerned will yet unite in the measure.

State Finances.

NEW YORK.

The finances of New York are conducted on the account of several funds. The "General Fund" is set apart for the ordinary expenses of government and the payment of appropriations not specifically due to other funds. The operations in this fund for the year ending September 30th, 1853, were as follows.

Deficiency at end of previous year... \$188,582 83
Payments during the year... 1,004,578 77
Transferred to other funds for interests due them... 26,663 35

\$1,219,824 95

Receipts on account of General Fund... \$769,278 53
Transferred from other funds... 31,333 46

Total receipts... \$800,611 99

Deficiency in revenue Sept. 30th, 1853... \$419,212 96

On account of the "General Fund Debt Sinking Fund" there has been paid... \$828,517 53

Balance due on previous year... 61,967 45

Returned to other funds... 4,080 21

\$894,565 19

Received into this fund from the treasury... 837,575 20

Balance due Treasury Sept. 30th, 1853... \$56,989 99

The condition of this fund is as follows.

Balance due Treasury, as above... \$56,989 99
Amount of fund invested in stock... 50,153 32

Deficiency in fund, September 30th, 1853... \$6,836 67

The valuation of real and personal estate, based upon the returns made, and upon the returns for 1852 where returns have not been made, is \$1,200,000,000, upon which an assessment of one mill per dollar will yield \$1,200,000. The state debt is as follows.

"Astor debt", 5 per cent., redeemable at pleasure... \$561,500 00

Stock, 5 per cent., redeemable Jan'y 1st, 1855... 348,107 00

Ithaca and Owego R. R. 4½ per cent. red. Jan'y 1st, 1864 587,700 00

Canajoharie and Catskill R. R. 5 per cent. red. July 1st 1865 28,000 00

do. " ½ in 1859 and ½ in 1860... 100,000 00

Revenue deficiency Stock, 5 per et., 1838... 422,961 20

New York and Erie R. R. 4½ per cent. 1859... \$300,000

5½ " " 1860... 400,000

5½ " " 1861... 1,200,000

6 " " 1861... 200,000

6 " " 1862... 900,000 3,000,000 00

Amount of State Stock... \$4,858,268 05

Comptroller's Bonds... 1,374,691 45

Indian Annuities... 122,694 37

General Fund Debt, Sept. 30th, 1853... \$6,355,654 37

Contingent State debt... 931,644 83

Canal debt... 15,501,269 16

Canal revenue certificates... 1,500,000 00

Total State debt absolute and contingent... \$24,288,568 36

State of the Treasury.

Balance on hand, Sept. 30th, 1852... \$177,378 08
Receipts from all sources... 2,356,658 20

\$2,534,036 28

Payments for all purposes... 2,480,011 12

Balance on hand, Sept. 30th, 1853... \$74,025 16

ILLINOIS.

The following is the statement of the receipts and expenditures at the State Treasury for the thirteen months ending Dec. 31st:

Receipts for revenue purposes... \$251,688 62
On hand, Dec. 1st, 1852 146,373 30
\$398,061 92

From which payments have been made as follows:

To purchase State indebtedness... \$137,018 82
Education of deaf and dumb... 25,000 00
All other appropriations... 196,577 88
358,596 20

Balance in the Treasury, Jan'y 1st, 1854... \$39,465 78

Outstanding claims against the Treasury at the same date, amounting to—say... 20,000 00

Receipts from special taxes.

Constitutional two mill tax... 285,258 41
Interest fund tax... 217,743 51
Insane hospital tax... 49,752 33
Institution for the blind tax... 29,575 88

Total special taxes... \$582,330 12

Total revenue... 251,688 62

Total payments into the Treasury... \$831,018 75

In addition to the above taxes, there has been received from the recent sales of State lands, and paid to the Governor, for the purchase of State indebtedness, the sum of... 97,000 00

WISCONSIN.

The whole sum paid into the Treasury for 1853 amounted to about \$300,000;—disbursements \$262,717 45. The general expenses of the State for the present year is estimated at \$147,210 70 and the means relied upon to meet them, at \$160,017 74. The School Fund January 1st, 1853, amounted to \$1,141,804 24, arising almost exclusively from sale of lands granted by Congress, and the amount for the support of common schools the present year is \$97,391 39.

LOUISIANA.

The message of Governor Hebert, of Louisiana, estimates the debt proper of the State, including the bonds issued for subscriptions of stock to New Orleans and Jackson, the New Orleans and Opelousas, and the Shreveport and Vicksburg Railroad, is \$3,281,809 41. Under the operation of the law passed at the last session to provide for the deficiency of the State resources by a loan of \$750,000, the receipts of the Treasury for the current year have amounted to \$2,148,407 65. The expenditures for the same period, for the ordinary expenses of the government and to meet the appropriation made by the last Legislature, amount to \$1,340,443 30, showing a surplus of receipts over expenditures of \$808,024 35.

Movement of Wheat and Flour over the Michigan Southern Railroad in 1853.

Barrels of flour carried during the year ending Nov. 30th, 1853... 144,061
Bushels of wheat do... 1,242,281½
Adrian, Coldwater and La Porte supplied the largest lots of wheat, and Tecumseh, Goshen, South Bend, Constantine and Adrian the largest lots of flour.

Ohio and Pennsylvania Railroad.

The sixth annual report of the President and Directors of this Company was read at the annual meeting at Pittsburgh, Jan. 26th. The following embraces the principal part of this document.

TO THE STOCKHOLDERS OF THE OHIO AND PENNSYLVANIA RAILROAD COMPANY:

Gentlemen:—The President and Directors of the Ohio and Pennsylvania Railroad Company take pleasure in presenting to the Stockholders, their sixth annual report since the commencement of the undertaking, and the first since the whole road was opened for use; and in congratulating them upon the eminent success which has crowned the enterprise.

The very small means with which the work was begun, and the active hostility of opposing interests with which it was met, admonished the officers of the Company, at an early day, of the necessity of great exertions to press the road forward to completion, in the confident belief that when the work was done, it would fulfil the expectations of its friends; both in its profitability to the stockholders and its usefulness to the public. The result has fully equalled our hopes in both of these important particulars.

On the 11th of April last, the road was opened from Pittsburgh to Crestline, 187 miles; and as soon after as the requisite arrangements could be made, an Express train was put upon it; the time of running which has been reduced to seven hours; so that passengers are brought from Cincinnati to Pittsburgh in fourteen hours and a quarter; at the low fare of seven dollars for a first class passenger, and five dollars for one taking a second class ticket. At these rates a successful competition with the steamboats on the Ohio River has been maintained.

Passengers are also ticketed to and from Louisville, Indianapolis, St. Louis, Chicago, Detroit, Toledo, Cleveland, and other important points.

The extraordinary development of the local business of the line, and of the trade and travel between the numerous towns upon it, is one of the most gratifying results of the business of the past year. It has taxed the equipment of the road to its utmost capacity, and has demonstrated the necessity of immediately increasing the number of engines and cars to an extent adequate to its accommodation.

It will be seen from the Report of the Chief Engineer and Superintendent, that the general result of the working of the road for the year, has been as follows:

| | |
|-----------------------|--------------|
| Receipts in 1853..... | \$668,004 49 |
| Expenses " | 301,639 36 |

| | |
|-------------------|--------------|
| Net receipts..... | \$366,365 13 |
|-------------------|--------------|

Which has enabled the Board to declare two semi-annual dividends to the Stockholders, the first of three and a half, and the second of four per cent. The net revenue of the road for the year, after paying expenses and interest, has been about nine per cent. on the amount of the stock.

The receipts of the first half of the year were about forty thousand dollars per month, and of the last half more than seventy thousand dollars; which great increase justifies the belief that the earnings of 1854 will be much larger than those of last year.

The patronage of the public thus liberally bestowed upon the road, calls for corresponding exertions on the part of the Company, to merit its continuance and increase. A double track has been begun, and twelve miles of it are now nearly completed, extending from Pittsburgh to Sewickley. The second track should be extended to New Brighton, twenty-eight miles from Pittsburgh, as soon as it can conveniently be done. The road bed is already graded for it. Surveys have been made for widening the road bed between Alliance and Massillon, which will not be an expensive work; and the double track from Alliance westward ought to be begun at an early day.

In the beginning of the year there were twenty

Locomotive Engines upon the road. The number now is thirty-one, and ten more have been contracted for, several of which are ready for delivery. Unexpected delays in the receipt of machinery have been productive of much inconvenience and disappointment.

It is the intention of the Board, with the approbation of the Stockholders, to make such additions to the equipment of the road as may be necessary to do all the transportation that may offer, without detention or delay; and also to provide such portions of double track, and such machinery and conveniences as may be necessary to maintain for the road the highest reputation for safety, promptness, and punctuality.

Three hundred and fifty-eight thousand seven hundred and thirty-eight passengers have been carried upon the line, in the past year, without an accident to the trains by which a single life has been lost.

The preparations for a greatly increased business will of course require an additional outlay of capital; but with conclusive proofs of the profitable character of the investment, the Board hope to be able to obtain the required amount without injurious financial sacrifices.

If necessary, the Board proposes to assist the Bellefontaine and Indiana Railroad Company, in extending its road from Galion to Crestline, a distance of about four miles.

The Board has given much consideration to the question of the extension of the line across the Allegheny river at Pittsburgh. The subject was referred to a special committee, and surveys were directed to be made by the Chief Engineer. The views of that officer are presented in his report, herewith submitted, and they will be found worthy of the attention of the stockholders. The City of Pittsburgh has already granted the right of way from the Allegheny river to Liberty street, either by St. Clair street, Hand street, or the Aqueduct.—The adoption of either of these routes will require some legislation; and the work ought to be begun as soon as this can be obtained, and other preliminary obstacles can be removed. The consent of the Stockholders of the Pennsylvania Railroad Company must also be granted, before any other crossing than that opposite their outer depot can be adopted. It is supposed that they will prefer a crossing at the Aqueduct, on account of its affording an opportunity for a direct connection with their station on Liberty street.

In accordance with authority given by the Stockholders at their last annual meeting, the Board has subscribed One Hundred Thousand Dollars to the stock of the Springfield, Mount Vernon, and Pittsburgh Railroad Company, and a like amount to the Ohio and Indiana Railroad Company. Of the first named subscription Sixty-two Thousand Dollars have been paid, up to this time, and of the last named Fifty Thousand Dollars. Portions of both the roads are already in use, and forty miles of the Ohio and Indiana road have been opened, within a few days, extending from Crestline to the Mad River road near Patterson.

The Board are so well satisfied that the most profitable application that the Company can make of its means and credit, is in perfecting and equipping its own road; that it is only in very peculiar cases that a departure from such a course can be justified.

They think, however, that a subscription of one hundred thousand dollars ought to be made to the stock of the Fort Wayne and Chicago Railroad Company, which will, when its work is completed, furnish a very direct line, of a uniform gauge, 463 miles long, from Pittsburgh to Chicago. This will be one of the most important extensions that the Ohio and Pennsylvania Railroad can possibly have, and the Board believes that it will pay well.

The expediency of constructing a branch railroad up the valley of the Big Beaver from Brighton to Newcastle, a distance of twenty-two miles, has been frequently urged upon the Board by citizens of Beaver and Lawrence counties. Such a line would connect with the proposed Pittsburgh and Erie, and Cleveland and Mahoning Railroads,

and would bring the north-western counties of Pennsylvania into close connection with Pittsburgh. It is proposed that the stockholders should pass a resolution, authorizing the Board of Directors to take such order in the matter, as they may think, after due deliberation, will be best calculated to promote the permanent interests of the Company.

It is expected that the inclined planes on the Portage R. R. will be avoided in about ten days by the opening of the Tunnel through the Allegheny mountain by the Penna. R. R. Co., which will greatly benefit our route, and shorten the time between Pittsburgh and Philadelphia.

The general result of the working of our road during the past year has been very satisfactory to the Board, and is highly creditable to the Chief Engineer and Superintendent, S. W. Roberts, Esq., whose services to the Company from the commencement of the undertaking have been of the most valuable character.

WM. ROBINSON, JR.,
President.

The following resolutions were presented, prefaced by some explanatory remarks, and after considerable discussion and interchange of views by the Stockholders, were adopted,

By F. Lorenz, Esq.,

Resolved, That the Stockholders instruct the Directors to proceed with the work of extending the Railroad across the Allegheny river, as soon as the necessary preliminary arrangements can be made.

By Gen. Wm. Robinson, jr.,

Resolved, That the Stockholders hereby authorize the Board of Directors to contribute One Hundred Thousand Dollars, on the part of this Company, towards the construction of the Fort Wayne and Chicago Railroad, on such conditions as they may think necessary to protect the interests of this Company.

Resolved, That the Stockholders hereby authorize the Board of Directors to take such action as they may think best with regard to the construction of a Branch road from Brighton to Newcastle.

By R. McKnight, Esq.,

Resolved, That the Board of Directors be and they are hereby authorized to subscribe or contribute to the construction of the link of road between Crestline and Galion, to connect this road with the Bellefontaine and Indiana R. R., on such terms and conditions as they may deem best for the interests of this Company.

Safety Valve Fastenings.

The ordinary mode of confining the end of the lever of the locomotive safety valve is by a "spring balance". As the resistance of a spring increases with the distance of movement, or extension, it follows that a pressure of steam barely able to raise the valve cannot raise it enough farther to cause a free and abundant discharge of steam. In view of this difficulty it has been attempted to use weights on the safety valve lever, as on stationary boilers. Henry Waterman of Hudson, N. Y., formerly Master Mechanic of the Hudson River Railroad, has obtained a patent for the attachment of a piston moving in a cylinder of oil, to the weighted end of a safety valve lever.

In the engines built by John V. Gooch of the London and South Western Railway, of England, the safety valve was in the form of a piston, sliding within a cylinder of 1 3/16 inch bore, and the coiled spring was placed immediately over the valve. It was thought better to have a small valve which could be fully opened without great increase of pressure than a large valve, rising within a considerable range of pressure, through only a very small distance. With large valves, long levers and stiff springs, this difficulty is very

great, and there is no doubt that the iron is often strained by it, if the boiler be not exploded.

Journal of Railroad Law.

The following will at this time be found worthy of attention,—as presenting the *strictly legal phase* of a great question of divers aspects and bearings.

A Railway Company incorporated by Act of Parliament cannot even with the assent of all its shareholders legally enter into a contract involving the application of any portion of its funds to purposes foreign from those for which it was incorporated. *The East Anglian Railway Company vs. the Eastern Counties' Railway Company* (Dec. 5, 1851, in *Eng. Com. Pleas*) 73 *Eng. Common Law*, p. 775.

The defendants above named were incorporated by an act of Parliament, the 1st section of which enacted that certain persons should be united into a Company for working and maintaining a certain Railway and other works by the Act authorized, according to the provisions thereafter mentioned, and for that purpose should be one body corporate by the name of "The Eastern Counties' Railway Company." The 3d section authorized raising money for the purposes above specified.—The 5th section provided for the specific expenditure of the money so raised in accordance with the purpose of the Act. Subsequent sections provided for the division of the net profits. Held, that it was not competent to the Directors to enter into a contract with another Railway Company, to take a lease of their line and to pay them the expenses they had incurred in procuring from Parliament the extension and improvement of such other line of railway, even though their own Company were benefitted by such extension and improvement. Such a contract would be void and could not be enforced. Jervis, Chief Justice, in deciding this case observed in substance that it was clear that defendants had a limited authority only,—and that their funds can only be applied as the Statute dictates. But it had been contended that they might deviate from their Charter, if by so doing they increased the profits of their own Railway. But they could not engage in any new trade, for they were incorporated for a specific purpose. However great might be the expected profits of a speculation,—if it was not within the scope of their authority they could not embark in it. Every Shareholder has a right to expect that the conditions upon which the act was obtained will be complied with and it was no sufficient answer to a stockholder expecting his dividend, that the money has been expended upon an undertaking, which may ultimately be very beneficial to the line. The public, too, has an interest in the proper administration of the powers conferred by the Act. The comfort and safety of the line would be jeopardized by a misapplication of its funds.—Lord Langdale said, in 10 *Beauvan* 15, that there was no authority whatever to justify a Railway Company in encouraging, for the increase of their own traffic, schemes not embraced by their Charters. The assent of all the stockholders in cases of this kind might make them personally liable but would not hinder them in their corporate capacity nor affect their corporate funds.

THE EFFECT OF PAYING MONEY INTO COURT IN ACTIONS FOR DAMAGES.—Payment of money into Court in actions brought to recover damages for

wrongs may, according to the form of the declaration used by the plaintiff, be construed in different ways. Where the declaration is *general and unspecific*, the payment into Court admits a *cause of action*, but not the identical cause of action sued for; on the other hand if the declaration is *specific* the payment into Court admits the very cause of action so specifically stated.

For example, if a declaration is filed for rescuing cattle which as trespassers have been impounded, in a pound not described in the declaration, the payment by defendant of money into Court, would not be deemed an admission on his part that cattle had been rescued from any particular pound and the plaintiff in order to recover damages beyond the amount paid into Court would be obliged to prove that a rescue had been unlawfully made by defendant, from some particular pound. But if on the other hand, the declaration did particularly describe the pound in question, the payment of money into Court by defendant, would have admitted the breach of that very pound, and consequently the plaintiff could not have been required to adduce any further proof on that head.

So in any action against a Railway Company for negligence whereby the plaintiff, a passenger, was injured, the injury having been specifically described in the declaration, the defendant paid £25 into Court and pleaded that no further damages had been sustained in consequence of the injury.—Held, by the Court, that the payment of the money into Court by the defendants admitted on their part that a contract to carry the plaintiff had been made, and also that such contract had been violated by the defendants. Such admission having been made, the plaintiff in order to recover additional damages was not obliged to furnish any additional proof that the defendants had been negligent, the damages being single, and depending upon nothing beyond the mere breach of duty admitted. *Ferren on the Monmouthshire Railway and Canal Co.* (May 9th in 1853, *Eng. Com. Pleas*.) 73 *Eng. Com. Law*, Rep. 855. See also *Spalding vs. Vandercook*, 2 Wend. 431, *Johnston vs. Columbian Ins. Co.*, 7 John. 315. *Bank of Columbia vs. Sutherland*, 3 Cowen, 3.

Rochester and Pittsburgh Railroad.

The *Daily American* publishes a report from McRee Swift, Esq., Engineer in Chief of the Rochester and Pittsburgh Railroad, to the Directors of the Company. A Company has been organized for the construction of a railroad in continuation of the line of the Valley Road from its Southern terminus at Portage to Ceres, a point in Pennsylvania, where the railroad of the Alleghany Valley extending to Pittsburgh is designed to have its northerly termination.

Two distinct routes have been instrumentally examined with much care, both passing through the village of Angelica and both terminating at Ceres, as above mentioned. By one of these routes via the Vallies of the West branch of the Cashagua, Baker's, Van Campen, and the Little Genessee Creeks, the distance upon a location would be 48½ miles. By the same route, as far as Angelica, and thence by the Vallies of the Genessee River, and Knight's, and Little Genessee Creeks, to the Southern terminus, the distance upon a location would be 51½ miles. On either route the maximum grade ascending northwardly and in the direction of the bulk of tonnage, is 40 feet per mile, and ascending southwardly, the present maximum grade of the Rochester and Genessee Valley Railroad can be closely adhered to.

Pacific Railroad of Missouri.

We have the second report of the above company, giving an exhibit of the operations upon, and condition of their work, for the year ending Nov. 30th, 1853.

FINANCIAL CONDITION.

| | |
|--|-----------------|
| The amount of capital, as by charter | \$10,000,000 00 |
| The amount of stock subscribed .. | 2,426,550 00 |
| The amount paid in, as by last report | 512,600 00 |
| The total amount of capital stock now paid | 1,048,580 00 |
| The funded debt, as by last report, the total amount now of funded debt, being issue of company's bond | \$ 90,000 } |
| Missouri State bonds, 1,150,000 } | 1,240,000 00 |
| The floating debt as per last report: | |
| The amount now of floating debt .. | 94,084 58 |
| Total amount now of floating and funded debt | 1,334,084 58 |
| Average rate per annum of interest of funded debt | 6 per cent. |

Total expenditure to date \$2,480,926 94

COST OF ROAD AND EQUIPMENT.

| | |
|--|----------------|
| Graduation and masonry | \$848,302 16 |
| Bridging | 46,227 93 |
| Superstructure, including iron and ballasting | 334,904 80 |
| Passenger and freight stations, buildings and fixtures | 33,993 93 |
| Engine houses, machinery, etc | 29,120 26 |
| Land, land damages and fences | 126,206 78 |
| Locomotives, stationary engines and saws | 57,474 06 |
| Passenger and baggage cars | 27,417 38 |
| Freight, gravel and hand cars | 44,515 24 |
| Engineering and agencies | 47,699 10 |
| Total | \$1,595,861 69 |
| Repairs of road, buildings, fences, etc | 4,898 19 |
| Repairs of engines, cars and machinery | 1,701 67 |
| General transportation expenses | 19,012 72 |

Total expenses, one year

| | |
|---|-------------|
| Receipts for year from Passengers, freights and rents | \$35,486 43 |
| The first division of the road, 36½ miles, was only opened on the 23d day of July last. | |

Bridging the Ohio.

The citizens of Covington, Ky., are about to apply for the right for the construction of a bridge to connect them with Cincinnati.

At Louisville a bridge is also proposed to connect the northern and southern systems of railroads which terminate on the opposite banks of the Ohio.

The Ohio is already bridged some hundreds of miles above, at Wheeling, and in a manner which offers no obstruction to the navigation.

The suspension principle is becoming a general feature in Western bridge engineering. It is capable of the wide spans which wide rivers with alluvial beds require. It can be readily and cheaply applied at great heights, an essential condition in crossing navigable waters, which are subject to great variation in water level at different seasons. The tubular bridge, which is the only other description of bridge which has been applied to open spans of 300 feet and upwards, is constructed only at immense cost, is dark within, and has never been applied above spans of 460 feet. It employs the transverse resistance instead of the longitudinal cohesion of the material. The suspension

bridge of nearly 1000 feet span, now building by Roebling across the Niagara, will show the adaptation of the suspension principle for railroad trains.

American Railroad Journal.

Saturday, February 4, 1854.

Stock and Money Market.

There has been a noticeable improvement in the Stock market for a few days past, indicating a greater abundance of money, and more confidence as to the future. The very rapid curtailment of expenditures in every branch of business for the past six months, has materially checked the flow of capital into the interior, while the extraordinary advance in all kinds of produce, has placed unexpected resources in the hands of Agriculturists. Money is sufficiently abundant for ordinary business purposes, and though but little is yet doing in Railroads and other securities, the continuance of the present improvement will soon create a demand for these. On the whole, affairs wear a more cheerful aspect than they have done for some time past.

The following is the comparative Bank statement for the week ending Jan 28:

| | Jan. 28. | Jan. 21. |
|------------------|------------|------------|
| Loans..... | 89,759,465 | 90,068,738 |
| Specie..... | 11,117,958 | 11,455,116 |
| Circulation..... | 8,642,677 | 8,605,235 |
| Deposits..... | 58,239,577 | 59,071,252 |

COINAGE OF THE UNITED STATES MINT FOR JANUARY.

Gold.

| | Pieces. | Value. |
|--------------------|---------|-------------|
| Double Eagles..... | 156,850 | \$3,137,000 |
| Quarter do..... | 32,632 | 81,580 |
| Dollars..... | 55,808 | 55,808 |

| | | |
|-----------|---------|-------------|
| Bars..... | 245,290 | \$3,274,388 |
| | | 368,883 |

Silver.

| | Pieces. | Value. |
|----------------------|-----------|-----------|
| Half Dollars..... | 408,000 | \$204,000 |
| Quarter Dollars..... | 1,196,000 | 299,000 |
| Dimes..... | 1,040,000 | 104,000 |

| | | |
|--|-----------|-----------|
| | 2,644,000 | \$607,000 |
|--|-----------|-----------|

Copper.

| | Pieces. | Value. |
|-----------------|---------|------------|
| Cents..... | 152,541 | \$1,525 41 |
| Half Cents..... | 55,360 | 276 80 |

| | | |
|--|---------|------------|
| | 207,901 | \$1,802 21 |
|--|---------|------------|

Gold Bullion Deposited.

| | Value. |
|----------------------|-------------|
| From California..... | \$4,151,000 |
| " Other Sources..... | 50,000 |

| | |
|-----------------------------|-------------|
| Total in January, 1854..... | \$4,201,000 |
| " December, 1853..... | 4,446,817 |

Silver Bullion deposited.....\$108,000

The New York Central Railroad Company paid on the 1st instant a 6 per cent. dividend, out of the earnings for 9 months. The Penn. Coal Company have declared a semi-annual dividend of 5 per cent. The New Albany and Salem of 4 per cent. in Stock, payable at Cammann & Co. The Cleveland and Pittsburgh a dividend of 5 per cent, payable at the Ohio Life and Trust Co. Messrs.

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

| NAME OF COMPANY. | Miles open. | Capital paid in. | Funded debt. | Tot. cost of road and equip't. | Gross Earnings for last official year. | Net Earnings for last official yr. | Dividend for do. | Price of Shares. |
|-------------------------------------|-------------|------------------|--------------|--------------------------------|--|------------------------------------|------------------|------------------|
| Atlantic and St. Lawrence... Maine. | 150 | 1,538,100 | 2,973,700 | 5,150,278 | 254,748 | 113,520 | none | 88 |
| Androscoggin and Kennebec.. " | 55 | 809,378 | 1,016,500 | 2,064,458 | 140,561 | 80,053 | none | 30 |
| Kennebec and Portland..... " | 72 | 952,621 | 29,80 | 2,514,067 | 168,114 | 100,552 | none | 41 |
| Port., Saco and Portsmouth.. " | 51 | 1,355,500 | 123,884 | 1,459,384 | 208,669 | ..... | 6 | 96 |
| York and Cumberland..... " | 20 | 285,747 | 341,100 | 713,605 | 23,946 | 11,256 | none | 24 |
| Boston, Concord and Montreal. N. H. | 93 | 1,649,278 | 622,200 | 2,540,217 | 150,538 | 79,659 | none | 85 |
| Concord | 35 | 1,485,000 | none. | 1,485,000 | 305,805 | 141,836 | 8 | 110 |
| Cheshite | 54 | 2,078,625 | 720,900 | 3,002,094 | 287,768 | 55,266 | 5 | 38 |
| Northern | 82 | 3,016,634 | ..... | ..... | 328,782 | 163,075 | 5 | 58 |
| Manchester and Lawrence.... " | 24 | 717,543 | ..... | ..... | ..... | ..... | 6 | 90 |
| Nashua and Lowell..... " | 15 | 600,000 | none. | 651,214 | 132,545 | 51,513 | 8 | 106 |
| Portsmouth and Concord.... " | 47 | ..... | ..... | 1,400,000 | ..... | ..... | none | ..... |
| Sullivan | 26 | ..... | ..... | 673,500 | ..... | ..... | none | 21 |
| Connecticut and Passumpsic.. Vt. | 61 | 1,097,600 | 550,000 | 1,745,516 | ..... | ..... | none | 29 |
| Rutland | 120 | 2,486,000 | 2,429,100 | 5,577,467 | 495,397 | 266,539 | none | 11 |
| Vermont Central..... " | 117 | 8,500,000 | 3,500,000 | 12,000,000 | ..... | ..... | ..... | 13 |
| Vermont and Canada..... " | 47 | 1,500,000 | ..... | 1,500,000 | Leased to the Vt. Cent. | ..... | ..... | 97 |
| Western Vermont..... " | 51 | 392,000 | 700,000 | ..... | Recently opened. | ..... | none | ..... |
| Vermont Valley | 24 | ..... | ..... | ..... | ..... | ..... | none | ..... |
| Boston and Lowell..... Mass. | 28 | 1,830,000 | ..... | 1,995,249 | 388,108 | 130,881 | 7 | 91 |
| Boston and Maine..... " | 83 | 4,076,974 | 150,000 | 4,092,927 | 659,001 | 338,215 | 7 | 103 |
| Boston and Providence..... " | 53 | 3,160,390 | 390,000 | 3,546,214 | 469,656 | 227,434 | 6 | 84 |
| Boston and Worcester..... " | 69 | 4,500,000 | 425,000 | 4,845,967 | 758,819 | 331,296 | 7 | 101 |
| Cape Cod branch..... " | 28 | 421,295 | 171,800 | 633,906 | 60,743 | 30,056 | 2 | 40 |
| Connecticut River..... " | 52 | 1,591,100 | 193,500 | 1,801,946 | 229,004 | 72,028 | 5 | 55 |
| Eastern..... " | 75 | 2,850,000 | 500,000 | 3,120,391 | 488,793 | 241,017 | 7 | 90 |
| Fall River..... " | 42 | 1,050,000 | none. | 1,050,000 | 229,445 | 99,589 | 8 | 100 |
| Fitchburg..... " | 66 | 3,540,000 | 112,305 | 3,623,073 | 574,574 | 232,787 | 6 | 92 |
| New Bedford and Taunton... " | 20 | 500,000 | none. | 520,475 | 164,230 | 43,950 | 7 | 117 |
| Norfolk County..... " | 26 | 547,015 | 819,743 | 1,245,927 | 67,251 | 23,415 | none | 68 |
| Old Colony..... " | 45 | 1,964,070 | 282,300 | 2,293,534 | 322,213 | 101,510 | none | 92 |
| Taunton Branch..... " | 12 | 250,000 | none. | 307,136 | 137,406 | 24,399 | 8 | ..... |
| Vermont and Massachusetts.. " | 77 | 2,140,536 | 1,001,500 | 3,203,333 | 218,679 | 18,648 | none | 23 |
| Worcester and Nashua..... " | 45 | 1,134,000 | 171,210 | 1,321,945 | 162,109 | 66,900 | 4 | 58 |
| Western..... " | 155 | 5,150,000 | 5,319,520 | 9,953,759 | 1,389,873 | 683,194 | 6 | 96 |
| Stonington..... R. I. | 50 | ..... | 467,700 | 240,572 | 110,892 | ..... | ..... | 66 |
| Providence and Worcester.. " | 40 | 1,457,500 | 300,000 | 1,791,999 | 291,417 | 120,892 | 6 | 95 |
| Canal..... Conn. | 45 | 922,500 | 500,000 | 1,400,000 | ..... | ..... | 4 | 65 |
| Hartford and New Haven.... " | 72 | 2,350,000 | 800,000 | 3,150,000 | 639,529 | 294,269 | 10 | 124 |
| Housatonic..... " | 110 | ..... | ..... | 2,500,000 | 329,041 | 168,902 | none | ..... |
| Hartford, Prov. and Fishkill.. " | 50 | ..... | ..... | In progres | 69,629 | ..... | ..... | ..... |
| New London, Wil. and Palmer " | 66 | 558,861 | 800,000 | 1,511,111 | 114,410 | ..... | ..... | 39 |
| New York and New Haven.... " | 61 | 3,000,000 | 1,641,000 | 4,978,487 | 806,713 | 428,173 | 7 | 99 |
| Naugatuck | 62 | 926,000 | 440,000 | ..... | ..... | ..... | 8 | ..... |
| New London and New Haven. " | 55 | 750,500 | 650,000 | 1,380,610 | Recently opened. | ..... | none | 52 |
| Norwich and Worcester..... " | 54 | 2,121,110 | 701,600 | 2,596,488 | 267,561 | 116,965 | 4 | 56 |
| Buffalo and New York City.. N. Y. | 91 | 900,000 | 1,550,000 | 2,550,500 | Recently opened. | ..... | none | 85 |
| Buffalo, Corning and N. York. " | 132 | ..... | ..... | In progres | ..... | ..... | none | 65 |
| Buffalo and State Line..... " | 69 | 879,636 | 872,000 | 1,921,270 | Recently opened. | ..... | ..... | 130 |
| Canandaigua and Niagara F.. " | 50 | ..... | ..... | In progres | ..... | ..... | ..... | ..... |
| Canandaigua and Elmira..... " | 47 | 425,509 | 582,400 | 987,627 | 76,760 | 39,360 | none | 68 |
| Cayuga and Susquehanna.... " | 35 | 687,000 | 400,000 | 1,070,786 | 74,241 | 23,496 | none | ..... |
| Erie, (New York and Erie)... " | 464 | 10,000,000 | 24,003,865 | 33,070,863 | 4,318,962 | 1,800,181 | 7 | 78 |
| Hudson River..... " | 144 | 3,740,515 | 7,046,395 | 10,527,654 | 1,063,659 | 338,788 | none | 68 |
| Harlem | 130 | 4,725,250 | 977,463 | 6,102,935 | 681,445 | 324,494 | 5 | 52 |
| Long Island..... " | 95 | 1,875,148 | 516,246 | 2,446,391 | 205,068 | 44,070 | none | 30 |
| New York Central..... " | 504 | 23,085,600 | 10,773,823 | 33,859,423 | ..... | ..... | ..... | 109 |
| Ogdensburgh (Northern).... " | 118 | 1,579,969 | 2,969,760 | 5,133,834 | 480,137 | 195,847 | none | 30 |
| Oswego and Syracuse..... " | 35 | 350,000 | 201,500 | 607,803 | 90,616 | 43,609 | 4 | 70 |
| Plattsburg and Montreal.... " | 23 | 174,042 | 131,000 | 349,775 | Recently opened. | ..... | none | ..... |
| Rensselaer and Saratoga.... " | 25 | 610,000 | 25,000 | 774,495 | 213,078 | 96,737 | ..... | ..... |
| Rutland and Washington.... " | 60 | 850,000 | 400,000 | 1,250,000 | Recently opened. | ..... | ..... | ..... |
| Saratoga and Washington.... " | 41 | 899,800 | 940,000 | 1,832,945 | 173,545 | 135,017 | none | 30 |
| Troy and Rutland..... " | 32 | 237,690 | 100,000 | 329,577 | Recently opened. | ..... | ..... | 33 |
| Troy and Boston..... " | 39 | 430,936 | 700,000 | 1,043,357 | Recently opened. | ..... | none | ..... |
| Watertown and Rome..... " | 96 | 1,011,940 | 650,000 | 1,693,711 | 225,152 | 116,706 | 8 | 96 |
| Camden and Amboy..... N. J. | 65 | 1,500,000 | ..... | 4,327,492 | 1,388,385 | 478,413 | 10 | 148 |
| Morris and Essex..... " | 45 | 1,022,420 | 128,000 | 1,220,325 | 149,941 | 79,252 | 7 | ..... |
| New Jersey..... " | 31 | 2,197,840 | 476,000 | 3,245,720 | 603,942 | 316,259 | 10 | 131 |
| New Jersey Central..... " | 63 | 986,106 | 1,500,000 | 2,379,880 | 260,899 | 124,740 | 3 | ..... |
| Cumberland Valley..... Penn. | 56 | 1,184,500 | 13,000 | 1,265,143 | 118,617 | 76,890 | 5 | ..... |
| Erie and North East..... " | 20 | 600,000 | ..... | 750,000 | Recently opened. | ..... | ..... | 125 |
| Harrisburgh and Lancaster.. " | 36 | 830,100 | 713,227 | 1,702,523 | 265,327 | 106,320 | 8 | 52 |
| Philadelphia and Reading.... " | 95 | 6,656,332 | 10,427,800 | 17,141,987 | 2,480,626 | 1,251,987 | 7 | 72 |
| Philad., Wilmington and Balt. " | 98 | 5,000,000 | 2,399,166 | 8,067,285 | 868,038 | 541,769 | 5 | 80 |

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

| NAME OF COMPANY. | Miles open. | Capital paid in. | Funded debt. | Tot. cost of road and equipm't. | Gross Earnings for last official year. | Net earnings for last official yr. | Dividend for do. | Price of shares. |
|-------------------------------------|-------------|------------------|--------------|---------------------------------|--|------------------------------------|------------------|------------------|
| Pennsylvania Central.....Penn. | 250 | 9,768,155 | 5,000,000 | 13,600,000 | 1,943,827 | 617,625 | .... | 97½ |
| Philadelphia and Trenton.... | 30 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Pennsylvania Coal Co..... | 47 | ..... | ..... | ..... | ..... | ..... | ..... | 102½ |
| Baltimore and Ohio.....Md. | 381 | 13,118,902 | 5,677,103 | 22,254,338 | 2,033,420 | 798,193 | 7 | 57½ |
| Washington branch..... | 38 | 1,650,000 | ..... | 1,650,000 | 348,622 | 216,237 | 8 | ..... |
| Baltimore and Susquehanna.... | 57 | ..... | ..... | ..... | 413,678 | 152,536 | ..... | ..... |
| Alexandria and Orange.....Va. | 65 | ..... | ..... | In prog. | ..... | ..... | ..... | ..... |
| Manassas Gap..... | 27 | ..... | ..... | In prog. | ..... | ..... | ..... | ..... |
| Petersburgh..... | 64 | 769,000 | 173,867 | 1,163,928 | 227,593 | 72,370 | 7 | 77 |
| Richmond and Danville..... | 73 | 1,372,324 | 200,000 | In prog. | ..... | ..... | ..... | 70 |
| Richmond and Petersburg..... | 22 | 685,000 | ..... | 1,100,000 | 122,861 | 74,113 | none | 40 |
| Rich., Fred. and Potomac.... | 76 | 1,000,000 | 503,006 | 1,531,238 | 254,376 | 113,256 | 7 | 100 |
| South Side..... | 62 | 1,357,778 | 640,000 | 2,106,467 | 62,762 | ..... | ..... | ..... |
| Virginia Central..... | 107 | 1,673,684 | 469,150 | 2,392,215 | 210,052 | 99,077 | 10 | 50 |
| Virginia and Tennessee..... | 73 | 2,650,091 | 707,958 | 3,545,256 | 109,268 | 42,736 | none | 98 |
| Winchester and Potomac..... | 32 | 180,000 | 120,000 | 416,532 | 89,776 | ..... | 12 | ..... |
| Wilmington and Raleigh.....N. C. | 161 | 1,338,878 | 1,134,698 | 2,965,574 | 510,038 | 153,898 | 6 | ..... |
| Charlotte and South Carolina. S. C. | 110 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Greenville and Columbia..... | 140 | 1,004,231 | 300,000 | In prog. | ..... | ..... | ..... | ..... |
| South Carolina..... | 242 | 3,858,840 | 3,000,000 | 7,002,396 | 1,000,717 | 609,711 | 7 | 125 |
| Wilmington and Manchester.... | ..... | ..... | ..... | In prog. | ..... | ..... | ..... | ..... |
| Georgia Central.....Ga. | 191 | 3,500,000 | 418,187 | 3,465,879 | 986,074 | 535,608 | 8 | 115 |
| Georgia..... | 211 | 4,000,000 | 1,214 | ..... | 934,424 | 456,468 | 7½ | ..... |
| Macon and Western..... | 101 | 1,013,088 | 163,000 | 1,277,334 | 278,739 | 149,960 | 9 | 100 |
| Muscogee..... | 71 | ..... | ..... | In prog. | 59,590 | 21,731 | ..... | ..... |
| South Western..... | 50 | 586,887 | 150,000 | 743,525 | 129,395 | 71,535 | 8 | ..... |
| Alabama and Tennessee River Ala. | 55 | ..... | ..... | In prog. | ..... | ..... | ..... | ..... |
| Memphis and Charleston..... | 93 | 776,259 | 400,000 | In prog. | ..... | ..... | ..... | ..... |
| Mobile and Ohio..... | 33 | 879,868 | ..... | In prog. | ..... | ..... | ..... | ..... |
| Montgomery and West Point.... | 88 | 688,611 | ..... | 1,330,960 | 173,542 | 76,079 | 8 | ..... |
| Southern.....Miss. | 60 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| East Tennessee and Georgia....Tenn. | 80 | 835,000 | 541,000 | In prog. | ..... | ..... | ..... | ..... |
| Nashville and Chattanooga.... | 125 | 2,093,814 | 850,000 | In prog. | ..... | ..... | ..... | ..... |
| Covington and Lexington.....Ky. | 38 | 1,430,150 | 900,000 | In prog. | ..... | ..... | ..... | ..... |
| Frankfort and Lexington..... | 29 | 357,218 | ..... | 584,902 | 87,421 | 44,250 | ..... | 70 |
| Louisville and Frankfort..... | 65 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Maysville and Lexington..... | ..... | ..... | ..... | In prog. | ..... | ..... | ..... | ..... |
| Cleveland and Pittsburgh.....Ohio. | 100 | 1,979,100 | 1,142,200 | 3,279,908 | 432,682 | 267,278 | 10 | 81 |
| Cleveland and Toledo..... | 147 | 2,000,000 | 1,600,000 | ..... | ..... | ..... | ..... | 91½ |
| Cleveland, and Erie..... | 95 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cleveland and Columbus..... | 135 | 3,027,000 | 408,200 | 3,655,000 | 777,793 | 483,454 | 12 | 124 |
| Columbus, Piqua and Indiana.... | 46 | ..... | ..... | 2,000,000 | ..... | ..... | ..... | 80 |
| Columbus and Lake Erie..... | 61 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cincinnati, Ham. and Dayton.... | 60 | 2,100,000 | 500,000 | 2,659,653 | 321,793 | 200,967 | ..... | 105 |
| Cincinnati and Marietta..... | ..... | ..... | ..... | In prog. | ..... | ..... | ..... | 72 |
| Dayton and Western..... | 40 | 310,000 | 550,000 | 925,000 | Recently | opened. | ..... | 80 |
| Dayton and Michigan..... | 20 | ..... | ..... | In prog. | ..... | ..... | ..... | ..... |
| Eaton and Hamilton..... | 36 | ..... | ..... | ..... | ..... | ..... | ..... | 60 |
| Greenville and Miami..... | 31 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hillsboro..... | 37 | ..... | ..... | In prog. | ..... | ..... | ..... | ..... |
| Little Miami..... | 84 | 2,668,402 | 482,000 | 3,169,733 | 667,559 | 352,133 | 10 | 117 |
| Mansfield and Sandusky..... | ..... | 900,000 | 1,000,000 | 1,855,000 | ..... | ..... | ..... | ..... |
| Mad River and Lake Erie..... | 167 | 2,387,200 | 1,767,000 | 4,110,148 | 540,518 | 113,401 | ..... | 95 |
| Ohio Central..... | 57 | ..... | ..... | In prog. | ..... | ..... | ..... | 90 |
| Ohio and Mississippi..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 87 |
| Ohio and Pennsylvania..... | 187 | 1,750,700 | 2,450,000 | ..... | Recently | opened. | ..... | ..... |
| Ohio and Indiana..... | ..... | ..... | ..... | In prog. | ..... | ..... | ..... | ..... |
| Scioto and Hocking Valley.... | 44 | 750,000 | 800,000 | ..... | Recently | opened. | ..... | ..... |
| Xenia and Columbus..... | 54 | 1,291,000 | 300,000 | 1,257,714 | 317,000 | 158,500 | 10 | 116 |
| Evansville and Illinois.....Ind. | 31 | ..... | ..... | In prog. | 237,506 | ..... | ..... | ..... |
| Indiana Central..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 90 |
| Indiana Northern..... | 131 | ..... | ..... | ..... | ..... | ..... | ..... | 115 |
| Indianapolis and Bellefontaine | 83 | ..... | ..... | ..... | Recently | opened. | ..... | 88 |
| Indianapolis and Cincinnati.... | 90 | 1,128,486 | 1,289,000 | 1,869,332 | Recently | opened. | ..... | 77 |
| Lafayette and Indianapolis..... | 62 | ..... | ..... | ..... | ..... | ..... | ..... | 82 |
| Madison and Indianapolis..... | 88 | 1,650,000 | 750,000 | 2,400,000 | 516,414 | 268,075 | 10 | 70 |
| Peru and Indianapolis..... | 40 | ..... | ..... | In prog. | ..... | ..... | ..... | 65 |
| Terre Haute and Indianapolis | 72 | 632,387 | 663,100 | 1,353,019 | 105,944 | 71,446 | 4 | 108 |
| Rock Island and Chicago.....Ill. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Chicago and Mississippi..... | 135 | 2,400,000 | 4,000,000 | 4,600,000 | ..... | ..... | ..... | ..... |
| Illinois Central..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 136 |
| Galena and Chicago..... | 92 | 1,932,361 | 500,000 | In prog. | 473,548 | 286,152 | ..... | 122 |
| Michigan Southern.....Mich. | 315 | 2,800,000 | 3,741,564 | 7,276,616 | 1,200,922 | 586,929 | 8 | 116 |
| Michigan Central..... | 282 | 4,856,700 | 3,977,563 | 8,618,505 | 1,145,598 | 582,816 | 8 | 101 |
| Pacific.....Mo. | 83 | 1,000,000 | none. | In prog. | Recently | opened. | ..... | ..... |

Winslow and Lanier advertise to pay the interest on several county and Railroad Bonds.

Baltimore and Ohio Railroad.

The Erie difficulties have turned a large amount of trade and travel from the New York roads, which, rather than pass through Pennsylvania has sought the Baltimore and Ohio road. This road, which has heretofore run but one through passenger train daily, commenced January 23d to run two through trains daily from Baltimore to Wheeling, one leaving Baltimore at 8 A. M., the other at 7 P. M.

The association of Jobbers in this city send their freights daily by the line of steam propellers, and give assurances that this shall be as safe, cheap and quick as any other route.

India Rubber for Railroads.

The New York Central Railroad Company have assumed the expense of laying one or two miles of rubber under their tracks, intended to obviate the present destruction of rails and machinery, and to do away with the noise attendant upon the motion of the trains.

News.

Mr. J. Edgar Thompson, President of the Pennsylvania Central Railroad Company, discontinues his subscription to our paper, on the ground "that the JOURNAL has ceased to be American!"

Cincinnati, Logansport and Chicago Railroad.

The following gentlemen were elected Directors of the above road on the 2d inst. About 12,000 shares of stock were voted:

J. T. Elliott and Miles Murphy, Newcastle; Williamson Wright, Logansport; John Hutton, Richmond; James Pullan and J. A. James, Cincinnati; Chas. K. Hamilton, Lemuel Stanwood, Geo. W. Riggs, L. Holbrook, Chas. J. Stedman, New York.

Ohio and Pennsylvania Railroad.

We give this week the 6th annual report of the Ohio and Pennsylvania Railroad. It shows the affairs of the Company in a very favorable light. The success of the road so far, bids fair to justify the high expectations that have been formed of it.

The old Board of Directors were rechosen. The road will continue under the efficient management of General ROBINSON as President, and S. W. ROBERTS as superintendent and Chief Engineer.

Jacksonville and Carrollton Railroad.

About \$3,000 has been paid in on the first installments of the stock of this road; while bonds of counties and of the city of Alton have been deposited to the amount of \$12,500.

Dividend Notice.

THE SEMI-ANNUAL INTEREST falling due in this city on the first day of Feb., 1854, on the following named Securities, will be paid on and after that date at the office of the undersigned on presentation of the proper Coupons:

The Cleveland, Painesville and Ashtabula Railroad Company Mortgage Bonds, 7 per cents.

The Ohio and Indiana Railroad Company Mortgage Bonds, 7 per cents.

The Clark County (Ohio) Bonds issued to Springfield and Columbus Railroad Company, 7 per cts.

The City of Madison (Indiana) six per cent. Bonds.

WINSLOW, LANIER & Co., No. 52 Wall-st. New York, Jan. 27th, 1854.

Friction of Steam Engines.

Experiments have been made at the Crystal Palace which show incidentally the normal friction of two steam engines; one an upright cylinder, beam engine, 14 inches cylinder, and 54 inches stroke, built by Corliss and Nightingale, of Providence, R. I.; the other a double cylinder, horizontal engine, 15 inch cylinders and 32 inch stroke, built by the Lawrence Machine Shop, at Lawrence, Mass.

The boilers are placed 200 feet from the engines. The pressure of steam was noted, however, from a pressure gauge in each steam pipe, near the engines.

The results obtained were as follows:

| PROVIDENCE ENGINE. | | —O— LAWRENCE ENGINE. | |
|-----------------------------------|-------------------------------|-----------------------------------|-------------------------------|
| Pressure per sqr inch, lbs. | Revolutions per minute. | Pressure per sqr inch, lbs. | Revolutions per minute. |
| 42 | 37 | 42 | 46 |
| 32 | 37 | 32 | 46 |
| 27 | 37 | 27 | 45 |
| 22 | 37 | 22 | 43 |
| 15 | 37 | 15 | 40 |
| 10½ | 37 | 10½ | 34 |
| 7 | 37 | 7 | 36 |
| 4½ | 36 | 4½ | 33 |
| 3 | 34 | 3 | 21 |
| 2 | 25 | 2 | 17 |
| 1½ | 18 | 1½ | 13 |
| 1 | 14 | 1 | 10 |
| ¾ | 7 | ¾ | 7 |
| 0 | stopped | 0 | stop'd. |

These trials were made when the engines and connected shafting were lubricated with Dr. S. A. Main's oil and grease. With the best sperm oil the results were not so favorable by fifty per cent.

It is to be remembered that these results show only the friction of the engines *out of work*, and that the absolute friction when under load is much greater. This remark is made that no such inference should be drawn as that "¼ lbs." or "1 lb." of steam is only required to overcome the friction. With the Providence engine, a pressure of 7 lbs. to the square inch was the least which preserved the ordinary working velocity; while with the Lawrence engine, working at the same pressure, the working velocity was reduced nearly one-fourth.

An ordinary practical allowance for the friction of steam engines is 3-10 the pressure on the piston when under *working* pressure and velocity.

Troy and Boston Railroad.

The report of the Directors of this road, read to the stockholders January 18th, 1854, shows the whole cost of the work to Sept. 30th, 1853, to have been—

| | |
|------------------------------------|-------------|
| | \$1,080,405 |
| Stock paid in..... | 437,830 |
| Funded debt..... | 459,000 |
| Floating debt..... | 235,757 |
| Gross earnings for the year..... | 154,118 |
| Net earnings for the same time.... | 68,321 |

The assets are nearly \$100,000 more than the floating debt.

The report says—"We have the greatest reason for confidence, that the State of Massachusetts, awaking to its interests and its pride, is represented by a legislature that will, this winter, make the loan, (to the amount of \$2,000,000,) of the State credit, to ensure the making of the Hoosic Tunnel, and thus make ours a great trunk road, for that part of the business of the West that may

seek an eastern outlet to New England and the Ocean.

Virginia.

A portion of the recent message of Governor Johnson is devoted to facts and suggestions touching the railroad interests of Virginia.

The lines of railroad, now under construction or survey in the State, are alluded to as of especial importance in their results upon the commerce of Alexandria, Richmond, Petersburg and Norfolk.

The Alexandria, Loudoun and Hampshire road, now under survey, will connect Alexandria with the Baltimore and Ohio Railroad, at Paddytown, west of Cumberland, and draw from thence a large share of the coal from the George's Creek Valley. The line will intersect the fertile, populous, and wealthy counties of Fairfax, Loudoun, Clark, Frederick and Hampshire. Paddytown is 165 miles from Alexandria, by the Loudoun line, and 201 miles to Baltimore, by the Baltimore and Ohio road. The Baltimore road has 82 feet grades both ways; the Alexandria line has 53 feet grades going east, and 79 feet going west. The Governor's message says:—

"This will give Alexandria an advantage over Baltimore for the trade of the north-west, of 36 miles in distance, and the difference between a grade of less than 53 and 82 feet. These are no small advantages, and especially in a competition for the heavy coal trade of the mountains. It will shorten the route of travel from the north-west to the capitol of the State some 65 miles, and secure to Alexandria the benefits that Cumberland and Baltimore have been enjoying from that travel. Indeed, it will be a shorter route for all who may be coming from the west to Washington city, or going from the federal capitol to the great west, to take this road, than by the Baltimore and Ohio road, by the way of Baltimore or the Relay-house, by 21 miles."

The importance of a trade between Virginia and European ports is urged, both upon its direct advantages, and as an incidental assistance to the public works in existence and in progress.

The message apparently encourages State aid in favor of the establishment of lines of steamers from the Chesapeake ports to Europe. The interest of all the available ports will be improved in the opening of an outlet to the trade which will be supplied through the various internal improvements in progress, or completed.

"The construction," says the message, "of the Fredericksburg and Gordonsville road will make the prosecution of the Alexandria and Orange railroad to Lynchburg as important to Fredericksburg as it is to Alexandria. In the same way the completion of the Central road, the construction of the Covington and Ohio railroad, and the extension of the Virginia and Tennessee road, will alike contribute to the interests of Alexandria, Fredericksburg and Richmond. The dock connections, the Norfolk and Petersburg, and the Petersburg and Lynchburg roads, will connect the cities of Norfolk and Petersburg with the Virginia and Tennessee road and the James River Canal. The other roads in the system answer like purposes—and as a common outlet to accommodate the immense trade and travel that these stems will bring to our shore—would contribute greatly to enhance that trade and travel, so it must be to the interest of each and all of these cities to secure such an outlet, though it should be the means of building up at one of our ports a city that would do credit to Virginia, and be the pride of the State. "Nature has been so bounteous that more difficulty is to be apprehended in selecting between the different locations than in finding a suitable point

for such a city." Let this be done with a proper regard to the best interests of the State, and in that liberal spirit that should characterize a Virginia people, and all will be satisfied."

Affairs at Erie.

The *American Railroad Journal* of Saturday has a strong and ably directed article on the Erie embargo. We recapitulate a few of the points made: 1. The West is the great party in interest, she cannot be forced to trade with the East through Pittsburg and Philadelphia, while New England as the great manufacturer, and New York as the great commercial agent of the country, afford better markets. The embargo and impost attempted at Erie are designed to affect this unreasonable purpose, and at the same time to collect a local tax for the benefit of an isolated borough. This to the Western farmer is a violation of his rights as a citizen, and a violation of the spirit of the Constitution of the United States, and may be so excessive as to cut him off from his favorite markets altogether.

"According to Gov. Bigler's doctrine, every little town may insist upon a break of gauge for the plunde it can gather out of it. The whole State in this way may be converted into a community of wreckers, living upon the misfortunes of their fellows. A caravan traversing the barbarous tribes of Asia or Africa is not more exposed to insults, to vexatious delays, to personal inconvenience, or to the danger of having their property destroyed than will be a person passing through North-western Pennsylvania, when the policy advocated by Gov. Bigler shall be practically applied.

Will the Western people submit to the degrading conditions imposed for the right to pass through Pennsylvania on the way to market? Can they be forced to take Philadelphia in their route in going from East to West? Will they not, at every cost, seek to defeat the object for which they are taxed? Such is human nature."

The next question is, will the Western people submit to this? The writer answers:

"The whole State of Pennsylvania, if she sustains the doctrines of Governor Bigler, will literally *sink* in the nostrils of the Western people. We think we know enough of Western States to say that for every dollar spunged out of them, the State of Pennsylvania will lose ten, by the withdrawal of a hitherto profitable intercourse. As it is, the Western people must have suffered severe losses by the interruptions suffered thus far at Erie. The forwarding of Western produce to market has been annihilated. The earnings of Western as well as Eastern roads, have been largely reduced. The former have particularly suffered in consequence of the detention, East of Erie, of a large number of locomotives ordered by them and almost indispensable to their daily wants. The next class of sufferers are the owners of railroad property. The general application of Governor Bigler's doctrine would destroy its value throughout the country. At the very announcement of such extraordinary doctrines, it is natural that capitalists should take alarm. It is well known that in this city the holders of Pennsylvania securities of all kinds are running them off quietly, but as rapidly as possible. Correspondents of foreign houses are taking the same views that we have expressed, and are advising their principals not to touch a security issued on account of a Pennsylvania Road. This distrust is the natural result of what has taken place, and will soon become general throughout the monied circles both of this country and Europe."

3. The interest of the city of Pittsburg is adverted to, in connection with the repeal of charters:

"In this view of the case, we are astonished at the move made by Mr. Darsie. Of the plunder to be gained by taxing Western commerce, Pittsburg could only expect to reap a small share. But she has a great interest at stake in the numerous and important lines of railroad which she is proposing to construct, and in the success of which she is deeply involved. Except for the money

they can get within their own State, these projects are as dead as a herring. As far as the general markets are concerned, the Pittsburgh companies might as well come before the public with projects for a railroad to the moon. Mr. Darsie undoubtedly thinks he has put a feather in his cap. If he has, it is one purchased at the expense of the Pennsylvania railroads. If he has any doubt as to the correctness of our opinions, we advise him to make a trial of the market."

We give this view of the Erie case from this old established *Journal*, exclusively devoted, for 25 years, to the railroad interest of the whole country—the works of Pennsylvania always included and liberally treated—in order that our Pennsylvania neighbors may know that they have not to battle with New York and Ohio alone, as they have suffered such miserable rioters as King and Lowry to persuade them, but that the issue is with the whole West, and with New England. Not only so, but that the effect is to be told hereafter, where some of their works, not yet completed, and others whose shares and bonds are a sore drag on their own money markets, will feel it most keenly—in Europe. No paper is so widely circulated abroad among the holders and buyers of American Railway securities as the *Railroad Journal*.—*New York Daily Times*, Jan 30th.

Nashville and Cincinnati Railroad.

We have received the report of Capt. John Childe upon the surveys made for a railroad from Nashville, Tenn., to Danville, Ky.

Nashville and Lexington have become important focal points for the Northern and Southern systems of railways. The miles of railroad directly converging to Nashville will be 2,950, and to Lexington 3,850, or in all 6,800 miles. Beyond and through these systems of railways there is connection with all the railways built or to be built in the United States.

Locally, the route intersects various tributary lines, five at least in Kentucky and one in Tennessee. The population of the counties intersected, including the terminal counties, was, in 1850, 170,000; and the taxable property valuation \$53,000,000.

The route of the road will be nearly North-east and South-west, the direction of the Cumberland Mountains; and the road lying intermediate between these and the Ohio River, will avoid the business competition of the latter as well as the difficult or impracticable points of the former.

Several routes have been surveyed, in all of which Gallatin, in Sumner County, Tenn., and Glasgow, in Barren Co., Ky., are intermediate points.

The most favorable route appears to be via. Gallatin, the Hermitage, Scottsville, Glasgow and Perryville to Danville. The characteristics of this route are stated as follows.

| | |
|---|-------------|
| Total length, miles..... | 178.82 |
| Maximum grade feet per mile, (same on all the routes surveyed)..... | 70 |
| Shortest radius of curvature..... | 1,432 |
| Total deflection in degrees..... | 6,512 |
| Length wood bridges and trestlework, feet..... | 6,399 |
| Length of tunnels, feet..... | 4,850 |
| Highest summit, feet..... | 675 |
| Highest bridge above water..... | 117 |
| Rise and fall, feet..... | 7,342 |
| Total perches masonry..... | 53,851 |
| Total yards earth and rock graduation..... | 10,282,007 |
| Total cost roadway..... | \$3,272,594 |
| " " cars and engines..... | 389,700 |
| " " superstructure..... | 1,929,806 |
| " " of road and equipment..... | \$5,592,100 |
| Average cost per mile..... | \$31,272 |

Capt. Childe estimates the receipts of the road

as \$1,081,260 per annum, the expenses \$402,960, and the net income \$678,290, or equal to 10 per cent. on six millions of dollars and \$78,290 over for depreciation of tracks and rolling stock.

Blue Ridge Railroad of South Carolina.

The object of this road, long cherished by the people of South Carolina, is that of affording a north western connection of Charleston with Louisville, Cincinnati and the general country in that direction.

The road will probably leave the South Carolina road at Aiken, and thence run through Edgefield, Abbeville, Anderson, Clayton, Rabun Gap and to Knoxville, Tenn. With the Knoxville and Danville road, the route between Louisville and Charleston will be brought upon nearly a direct line.

The Columbia Branch and Greenville and Newbury roads, in South Carolina, would form the immediate connections of the Blue Ridge road with Charleston, and until the completion of the proposed route from Aiken to Anderson, via Abbeville.

In the late message of the Governor of South Carolina is given the following information relative to the condition of this enterprise.

By the act of incorporation of the Blue Ridge Railroad Company, passed by the last General Assembly, the guarantee of the State upon the bonds of the Company, to the extent of \$1,250,000 was secured upon the following conditions: First, that \$500,000 should be previously subscribed to the capital stock of the said Blue Ridge Railroad Company in South Carolina, by responsible persons, companies, or corporations. Secondly, that such subscriptions should be made, or aid furnished to the Railroad Companies in North Carolina and Tennessee, designed to connect with that portion of the road lying in this State, as would give reasonable assurances of the construction of the said North Carolina and Tennessee Roads. These conditions have been complied with.

At rates agreed upon with contractors, the entire cost of the Road, from Anderson to Knoxville in Tennessee, together with necessary appertenances, including interest accruing upon the bonds of the Company until the completion of the road, will amount to the sum of about \$7,500,000. To meet this outlay, the Company estimate their resources at \$6,700,000.

It will thus be seen that the means of the Company will fall short of the estimated cost of the work about \$800,000.

I have been enabled to ascertain, that by the terms of contract between Messrs. Bangs and Co., the work was to be commenced on the first of this month—and that a large portion of the surveys are completed, and found to present fewer obstacles than was at first supposed. A location has been made for tunnelling the Blue Ridge, and work allotted to contractors,—that their preliminary arrangements are in a state of forwardness,—that the districts through which the road will pass in this State will abundantly supply all the necessary labor,—that the citizens both in this State and beyond it have with extraordinary unanimity ceded the right of way without compensation—and that every circumstance tends favorable to an early and thorough completion of this enterprise.

A subscription on the part of the State of \$750,000 to this work is recommended by the Governor.

The Tennessee Legislature have also granted aid to the Blue Ridge Railroad Company within the limits of that State to the amount of \$550,000. This with the subscription under the control of Knoxville, raises the contribution to this important work to the sum of \$850,000. We also

learn that a bill was before the Legislature, the passage of which was confidently anticipated granting aid to the amount of a million of dollars to a branch connecting Chattanooga with the Blue Ridge Railroad at a point near the State line.

Loss of Lives and Property on the Lakes.

The loss of life and property on the great American Lakes during the last six years as nearly as it has been ascertained was as follows:

| Years. | Value of Property. | No. of Lives |
|-----------|--------------------|--------------|
| 1848..... | \$420,512 | 55 |
| 1849..... | 368,171 | 34 |
| 1850..... | 558,826 | 395 |
| 1851..... | 730,537 | 79 |
| 1852..... | 992,659 | 296 |
| 1853..... | 874,143 | 81 |

In 1850 and 1852, the years showing the alarming excess in the loss of life in the above table, the steamers *Griffith Wayne* and *Atlantic* were lost by fire and explosion, and the steamer *Troy* also exploded, causing severe loss of life; while during the other four years represented in the foregoing table no such casualties involving great losses of life occurred.

The causes of these losses as shown by the following comparative statement will be interesting to Insurance Companies and vessel owners as exhibiting in some degree the results of the new law with reference to steam vessels engaged in the passenger trade. With one exception no lives have been lost during 1853 on the regular passage steamers. This exception was the case of the *Ocean Wave* on Lake Ontario.

| CAUSES. | 1852. | 1853. |
|-------------------|-----------|-----------|
| Collision..... | \$261,950 | \$55,823 |
| Explosion..... | ..... | 77,394 |
| Fire..... | 730,709 | 132,055 |
| Other causes..... | ..... | 608,871 |
| Total..... | \$992,659 | \$874,143 |
| | 874,143 | |

Decrease in value....\$118,516

The losses from explosions and collisions were much less in 1853 than in 1852 while from other "casualties" arising from stress of weather, bad harbors &c. they were greater.

The following table exhibiting the number of accidents each month will give some idea of the time of year most prolific in disasters, for the two last years respectively.

| MONTHS. | 1852. | 1853. |
|----------------|-------|-------|
| April..... | 7 | 19 |
| May..... | 19 | 30 |
| June..... | 24 | 17 |
| July..... | 15 | 11 |
| August..... | 16 | 28 |
| September..... | 21 | 30 |
| October..... | 27 | 39 |
| November..... | 85 | 80 |
| December..... | 15 | 12 |
| Total..... | 229 | 266 |
| | | 229 |

Increase in number in 1853...37

The annexed figures will show the character and nationality of the vessels and property lost and the waters in which the disasters occurred.

| | 1852. | 1853. |
|--------------------------|-----------|-----------|
| American vessels..... | \$907,487 | \$635,623 |
| British..... | 85,172 | 238,620 |
| Steam..... | 635,620 | 461,800 |
| Sail..... | 359,039 | 412,343 |
| Lake Ontario, Steam..... | 49,850 | 188,400 |
| " " Sail..... | 29,589 | 94,677 |
| Totals..... | \$78,939 | \$283,077 |

| | | |
|-----------------------|-----------|-----------|
| Erie, Steam..... | \$543,470 | \$128,606 |
| " " Sail..... | 197,830 | 121,906 |
| Totals..... | \$741,300 | \$250,512 |
| " Huron, Steam..... | \$16,000 | \$88,594 |
| " " Sail..... | 53,600 | 72,744 |
| Totals..... | \$69,600 | \$161,338 |
| " Michigan, Steam.... | \$800 | \$28,700 |
| " " Sail..... | 78,020 | 183,616 |
| Totals..... | \$78,820 | \$212,316 |

The improved system of lights, as carried by vessels on the Lakes, and the operation of the new steamboat law have resulted most satisfactorily, in their effects as exhibited in the foregoing tables. The last year was the first of their operation, and these results should, we think entirely disarm opposition to them.

Trade of Lake Ports for 1853.

TOLEDO.

Imports Coastwise.

| | |
|--------------------------------|--------------|
| Merchandise 35,146 tons..... | \$28,116,800 |
| Railroad iron 38,888 tons..... | 2,380,880 |
| Other articles..... | 2,892,907 |

Total.....\$33,340,587

Exports Coastwise.

| | |
|-------------------------------|-------------|
| Wheat, bushels 2,467,564..... | \$2,615,617 |
| Corn, " 2,549,606..... | 1,402,283 |
| Flour, bbls. 330,382..... | 1,734,505 |
| Other articles..... | 4,505,449 |

Total.....\$10,257,854

| | |
|--|------------|
| Foreign imports..... | 262,718 |
| Exports to Canada..... | 54,195 |
| Total domestic and foreign imports.... | 33,603,305 |
| " " " exports..... | 10,312,049 |

Total Lake Commerce of Toledo. \$43,915,354

GRAND HAVEN.

| | |
|--------------------------------|-----------|
| Exports in 1853 valued at..... | \$651,770 |
| " 1852 "..... | 407,332 |

Increase.....\$244,438

Of the exports in 1853, 41,000,000 feet of lumber, valued at \$328,000, and 19,336 barrels of flour, valued at \$96,680 are included.

Milwaukee and Mississippi Railroad.

The Milwaukee Free Democrat contains an abstract of the Annual Report of the Directors of this road, from which it appears that its earnings for the year 1853, have been as follows:

| | |
|---------------------|--------------|
| For passengers..... | \$ 78,635 34 |
| Freight..... | 142,820 28 |

Total.....\$221,455 68

| | |
|--|--------------|
| Expenses of operating road, repairs to track, cars and engines, salaries, etc..... | \$ 87,115 48 |
|--|--------------|

Net receipts.....\$134,340 14

| | |
|---|-------------|
| Deduct interest paid on construction bonds..... | \$58,200 00 |
|---|-------------|

Leaving.....\$76,140 24

The board have declared a dividend of ten per cent., payable in stock.

The road was opened to Stoughton, 80 miles from here, on the 2d inst., and will be opened to Madison in the spring.

75,975 persons have been carried over this road during the past year, without accident to one of them; and 67,000 tons of freight have also been transported over the road, exclusive of what has been carried for construction purposes.

The company have expended \$20,925 in the

erection of a machine shop, warehouses, etc., in Milwaukee; \$13,397 in the construction of fences; \$3,688 for a depot at Fulton; \$3,638 for a depot at Stoughton, and \$4,430 for a like purpose at Madison.

The amount of grain, flour, pork, etc., brought in from the West for the year, is as follows:—Wheat, bushels, 670,551; corn, do., 13,548; oats, do., 49,522; barley, do., 132,326; rye, do., 27,863; flax seed, do., 2,623; grass seed, do., 3,326; potatoes, do., 10,844; flour, bbls., 52,915; pork, do., 1,510; pork, lbs., 1,029,778; hogs, 55,523.

The Wisconsin of the 10th, states that the old Board, with the exception of H. S. Alden, who is substituted for Anson Eldred, resigned, will, probably, be elected with little opposition. The following is the ticket:

| | |
|----------------|-------------------|
| John Catlin, | George H. Walker, |
| E. B. Wolcott, | E. D. Holton, |
| E. Cramer, | H. Crocker, |
| A. Mitchell, | S. H. Alden, |
| A. E. Ray, | J. Cobb, |
| A. Finch, Jr., | J. Goodrich, |
| S. C. Hall, | W. A. Barstow, |
| | H. L. Dousman. |

Expansion of Locomotive Boilers.

Harvey Rice, Esq., master of engine repairs at the Piermont shops of the New York and Erie Railroad, has found that locomotive boilers of a little less than 16 feet extreme length, (furnace and tubes,) expanded 7-16 inch in length, between the temperature when cold and when under full steam. Another trial on boilers of about 18 feet length, (13 feet tubes and 4 feet furnace,) showed a range of expansion of *nine-sixteenths* of an inch. In the sixteen feet boiler, the forward end is held firmly to the frame; the hind end is fitted with an "expansion brace," and the allowance made in this brace is but one-quarter of an inch. Rogers was the first, we believe, to perceive the necessity, and to apply the expansion brace; but the allowance which he has made in his engines is often hardly sufficient. On the New York and New Haven road, with 11½ feet tubes, and furnaces 4½ feet long inside, an allowance of ¼ inch in the expansion brace is found insufficient, and the junction of the waist of the boiler with the firebox leaks in consequence.

Engine builders often judge of the amount of expansion by firing a boiler in the shop, up to a pressure of steam only sufficient to test the tightness of the boiler. When the engine comes into use and the fire is acted upon by the *blast pipe* the expansion is much more. A locomotive builder in New England, who recently commenced the construction of outside connected engines, with the boilers fastened firmly to the cylinders and frame at the forward end, has gravely told us there was *no perceptible expansion*, while we have found in the case of all his engines, so constructed, the boilers were leaking at the connection with the firebox; solely for the want of expensive allowance.

A large number, nearly fifty, of the earlier engines on the Erie road had dome-boilers fastened especially strong to the frame at each end. The connection of the horizontal barrel of the boiler with the upright side of the dome being the weakest part of the boiler in resisting expansion, the seam of rivets in that place was strained, and consequently commenced leaking. There are very

few engines of that pattern upon the road which do not now exhibit from one to three large *patches* riveted in the "gusset."

In Roger's engines having expansion braces at the furnace end, the back boiler brace, connecting the waist of the boiler with the frame, is placed with its edge outside, so as to offer its flat side in the direction of the expansive strain.

Representative Men.

Every State has its "representative men", in whom are incarnated the ideas, the sentiments, and the aspirations of the people. These incarnations are the *model* man, the *ideal* of excellence. Such in the eyes of Pennsylvania, appear to be Messrs. King and Lowry, the former Mayor of Erie, and both distinguished leaders in the Erie riots. These men have just now been making a triumphal tour of the State. In Pittsburgh a public meeting was got up for them, in which some of the leading citizens of that town figured conspicuously. One of their warmest sympathizers on that occasion was Gen. William Larimer, Treasurer of the Ohio and Pennsylvania, and President of the Connelville, railroads. The papers also state that the Hon. Wm. F. Johnston, late Governor of the State, and President of the Alleghany Valley Road like a good Samaritan, "visited them in prison." At Philadelphia they had an equally flattering reception. They were taken by the hand by some of the leading men of that city, to whom they announced the momentous fact, that Erie would be totally ruined by an *uniform* gauge through her limits. This was the principal burden of their discourse, garnished by some allusions to the "grasping ambition of New York."

So much for the spontaneous bursts of expressions in favor of the "representative men of Erie." But these have reached a higher destiny. They are the representative men of the *legislature* as well as the citizen. But they have one smirch, however, upon their escutcheon. In them the "representative" is completely outdone by the "constituent". The "representative" burnt up a few bridges, tore up a hundred rods of road or so, but the "constituents" have laid violent hands upon a whole road, equipment, and all. The legislature have changed places with Messrs. King and Lowry, and have eclipsed their bright exemplars. They shine out with tenfold greater splendor.

"None but themselves can be their parallel."

Prizes to Enginemen.

In our last number was given a list of prizes awarded by the Little Miami Railroad Company to their enginemen. The policy of such awards is unquestionably for the interest of railroad companies, as it has been found to promote vigilance and caution. The Superintendent of the Indianapolis and Bellefontaine Railroad Company lately presented a valuable gold watch, in conformity with a previous offer of such a prize, to the engineman who should kill the least live stock while running passenger trains. On the New York and New Haven Railroad, a *bonus* of one hundred dollars per year is given to all enginemen who faithfully perform their duties. By this plan, no engineman who does his duty will be disappointed; the character of a *lottery*, in which light enginemen might look upon a contest for a single prize, being removed.

Fusible Plugs for Steam Boilers.

In Massachusetts the use of fusible plugs, in steam boilers of all kinds, is enforced by law.—From motives of economy, independent even of safety, we should suppose that every boiler should be provided with a plug, of fusible metal, in the crown of the furnace.

Fusible plugs were originally intended to melt at the temperature of a high pressure of steam, and to act then in the manner of a safety valve. The plug then might as well be in the outer crown as in the crown sheet of the furnace. Proportions of bismuth, tin and lead were compounded with reference to their becoming melted at assumed temperatures of steam. But it being found that the precaution was not always operative, the fusible plug went out of use, even where its employment had been made compulsory by law.

But for *over heating*, a danger different from ordinary over pressure, a fusible plug is of much value, as it is placed in the most exposed situation and its indications are unmistakable; a deficiency of water being attended by a discharge of steam into the furnace.

Lead is often used for safety plugs, but its melting temperature, 612°, is high enough to allow iron to become injured before the fire is put out in the furnace. A mixture with tin, by which the mass may melt at between 400° and 450°, would be better. As the alloy may, in time, become filled with infusible deposits it is a good precaution to renew a plug every few months.

We have often known furnaces to become burnt, or warped by over-heating, where a fusible plug would have averted the injury. The expense of removal and the danger of the failure of a "burnt crown" are both the bad results of a want of so simple a preventative.

But where a safety plug melts out on the road the engine is disabled until a new one is put in.—The safety plug made by Edward H. Ashcroft, of Boston, allows the water, however, to fall only to within an inch or two of the crown sheet before the plug is melted; and when the latter occurs the steam may be afterwards shut off from around the plug, so as to allow the engine to get to a station. The alloy of the plug is prepared to melt at from 400° to 450° and it is placed within a pipe open to, but an inch or two above the crown of the furnace. The operation of the apparatus is quick, and an alarm whistle can be attached, if thought necessary, to attract the attention of the engine-man. The furnace cannot be injured and the engine is not disabled.

From the danger of overheating, both in immediate explosion or subsequent failure, and from the expense of renewing a furnace, no engine should run a single day without some kind of plug.

Cincinnati and Aberdeen Railroad.

A route for a railroad to connect the above points has been surveyed by O. P. Ransom, Esq. The line follows the bank of the Ohio, and runs in a south-easterly direction from Cincinnati. The distance is 54 miles, and the estimated cost, (with 5 miles of sidings,) \$1,509,589 or \$25,586 26 per mile for the whole distance of 59 miles. The estimates are for a track 1½ feet above the highest floods of the Ohio. The maximum grade, for 9¼ miles, is 15 feet, while 38½ miles are level or less than 5 feet rise per mile.

The Chilled Slip Tire.

At the last meeting of the members of the Franklin Institute of Pennsylvania, this improvement was brought up for notice. The Journal of the Institute says:

"Mr. Fairman Rogers also described a new chilled cast iron wheel tire, used by the Baltimore and Ohio Railroad, for the driving wheels of their locomotives. In the traffic of that road, with heavy grades and large loads, the necessary use of sand on the rails has been found to wear the ordinary Low Moor wrought tire into flat places upon the circumference of the wheel. In addition, the wrought tires being shrunk on hot, are exceedingly difficult to remove and replace when worn. The new tires are cast in contact with a cold iron ring, in order to chill the tread and flanch; and the outside of the wheel and the inside of the tire being carefully turned to fit each other, and slightly coned towards the outside of the wheel, the tire is dropped into its place, set by a few blows with a sledge, and brought to its bearing by bolts passing through lugs cast on the tire. By having tires ready turned to fit the engines, a set of wheels can be newly tired in a very short time. The cast also costs much less than the wrought tire, and resists the wearing action of the sand on the rails a much longer time."

The chilled tire, however, is no new thing, the Baltimore and Ohio Company having had it in constant use for more than ten years; while it is now used there in preference and over all others. Mr. Rogers' view, in which we have no doubt the members of the Institute fully concurred, are demonstrably correct as regards the economy, convenience and durability of the chilled tire. Its safety and *adhesion* have also been satisfactorily determined.

Rolling Stock of British Railways.

The total number of locomotives on railways in the United Kingdom is 3,942, or about one to every two miles of road. The total number of passenger carriages, 11,364, capable of seating 335,206 passengers.

On the narrow, or 4 feet 8½ inch gauge lines, in England and Wales, the working stock in use is 2,982 engines, 1,770 first class and 2,578 second class carriages; besides third class and composite carriages. On the 7 feet gauge the working stock is 239 engines, 197 first class and 259 second class carriages, besides third class and composite carriages. All the Scotch lines are of 4 feet 8½ inch gauge; those of Ireland are 5 feet 3 inches.

Columbus and Xenia Railroad.

By the fourth annual report of this company we learn the receipts for the year ending November 30, 1853, were..... \$314,434 06
The operating expenses..... 145,821 37

Leaving as net earnings..... \$168,612 69
Two half yearly dividends, of 5 per cent each, have been declared payable in cash or stock. The Stockholders have elected to receive stock. The present capital stock is \$1,291,700. Bonds issued, convertible, \$26,000. Total cost of road and equipment \$1,319,047 68. The capital stock of the Company has been increased during the past year \$199,562 03, by the conversion of bonds, payment of stock dividends and by new subscriptions.

The Company have subscribed \$50,000 each to the Dayton, Xenia and Belpre and the Springfield and Columbus roads, by which, and with arrangements made for connections upon their completion a desirable position is attained by the C. and X. Road, such an one as has long been a part of its policy to secure.

Railroad Chairs cast upon the Rail.

The London and North Western Railway Company have for nearly two years applied their rail-chairs by casting them around the joint. A portable cupola is used, weighing six hundred weight, made of one sixteenth inch iron, 27 inches in diameter and 54 inches high, lined with fire brick 4 inches thick, and in which 3½ tons of iron have been run down in seven hours. Iron chills or moulds are put around the ends of the rails at the joints, loam being packed around to prevent loss of metal, the iron is then poured in, and in five minutes is cooled and the chair is perfect. 120 chairs have been cast by this manner from one cupola in one day.

There can be no settling of the ends of the rails by this manner of connection, as a line of rails thus becomes a continuous girder.

Improvement in forging Scrap Iron.

An important improvement is said to be practised at some of the English Forges, where scrap iron is worked up. Instead of carrying the piles for some distance to the rolls or hammers before being compressed, and during which the "scale" is forming, an anvil is fitted directly at the mouth of the puddling furnace and a hammer arranged over head so as to drop once or more, at pleasure, upon the opening of the furnace door.—A hammering weld is thus taken at the moment the iron leaves the furnace. In rolling, the ends of the piles are not overdrawn as is usually the case, and a considerable amount of "cropping" at the shears is saved. The quality of the iron is said to be improved \$5 per ton by this mode of working.

Can a State Seize the Property of an Individual?

It is stated that Governor Bigler has gone to Erie to take possession of the Franklin Canal company's road. We do not understand that he is competent, on behalf of the State, to do this. If the road has been constructed without a sufficient charter, then the original stockholders become tenants in common in the property. Their title to it is not impaired; the relations they sustain to it only changed. They may have no right to run their road, but they clearly cannot be dispossessed of their property. Neither locomotive engines, cars, nor the road, are *contraband*, even in Pennsylvania; and as we understand it, they may be transported through the State, or out of the State, by their lawful owners. The real estate of a road constructed without a valid charter, either reverts back to the original owners, or becomes vested in the stockholders; or perhaps in the Directors, in trust for the stockholders. So Governor Bigler may have gone on a fruitless errand after all. The owners of the road may retire with their portable property into Ohio or New York, and leave the Governor in possession of a field, barren both of laurels or spoils.

Portland, Saco and Portsmouth Railroad.

The accounts of the P. S. & P. Railroad are made up to the end of November in each year.—We give below a statement showing the comparative amount of passengers and the relative increase between the financial years 1852 and 1853.

| | 1852 | 1853. |
|-----------------------------|---------------|-----------------|
| Number of passengers, | 22,359 | 264,080 |
| Receipts..... | \$208,669 11 | \$244,110 84 |
| Increase in 1853 over 1852, | \$35,441 23,— | or 16 per cent. |

Progress and Finances of St. Louis.

| Pop. | Assessed value of propy. |
|--|--------------------------|
| 1840 16,649 | \$8,682,506 |
| 1850 74,439 | 29,676,649 |
| 1852 94,000 | 38,281,669 |
| 1853 100,000 | 39,397,186 |
| Receipts into city treasury for year ending in August 1853, were..... | |
| \$1,124,468 | |
| The population and wealth of the city have doubled every five years since 1833. | |
| Imports of Saint Louis 1853..... | \$917,000 |
| Receipts of Flour 1853..... | bbls. 737,000 |
| The present debt of the City of Saint Louis in bonds sold, exclusive of railroad bonds is..... | |
| \$1,960,206 | |
| The debt of the County of St. Louis in bonds, exclusive of railroad bonds, is..... | |
| 707,000 | |
| Total..... | \$2,667,296 |
| Debt of the city in bonds delivered to railroad companies..... | |
| 1,075,000 | |
| Debt of the county in do..... | |
| 400,000 | |
| In addition to the above the city has authorized to be issued: | |
| Bonds for railroad subscriptions..... | \$525,000 |
| Conditional additional subscription to the North Missouri and Iron Mountain Railroad..... | |
| 400,000 | |
| Bonds for city purposes..... | |
| 672,000 | |
| Total..... | \$1,597,000 |
| County bonds authorized to be issued, but not yet delivered, to railroads.. | |
| 1,300,000 | |
| City and county bonds to be issued \$2,897,000 | |
| Of the city and county bonds to be issued about \$500,000 are yet unsold. And making the necessary change of this amount in the above calculation, the result is as follows: | |
| City and county bonds sold..... | \$3,642,296 |
| Do. authorized but not sold..... | 3,397,000 |
| Total..... | \$7,030,296 |

In regard to the above \$1,300,000 proposed to be issued we understand that it is probable that that intention will be abandoned and a direct tax for the benefit of the roads which were to receive them, laid instead.

Belleville and Illinoistown Railroad.

This road was originally designed to connect Illinoistown, opposite Saint Louis, with Belleville, in St. Clair County. The direction is nearly south east from Saint Louis. By a section of its charter, by which it was authorized to connect with any other road in the State, it has been proposed to extend the road north to Alton, and south to a point of connection with the Central Road near Cairo. The objects sought are, first, a southern outlet to St. Louis, connecting with the Mobile and Ohio, and other roads on the great southern and south eastern lines; and second, a general connection of the northern and southern systems of railroads terminating respectively at Alton and Cairo. The people of Alton, anxious that the northern roads shall terminate in their city, have denied the right of extension of the Belleville Company, and the construction of the charter of the road has therefore been carried before the Supreme Court, where it will be soon decided.

In a recent letter of the President of the Company, Jas. L. D. Morrison, to the Belleville Advocate, it is stated that the grading and masonry of the road are completed between Illinoistown and Belleville, the grading across the bottom being above the high water of 1852. The securities of the Company, amounting to \$600,000 have been

sold and the entire proceeds invested in iron, the Company having about 13,000 tons of rails. Invoices of 2,800 tons have been received, and from the time it has been at sea it is expected to be at New Orleans. Two miles of the road from the Mississippi river have been laid with rails borrowed from the Ohio and Mississippi Company, and in thirty five days from the receipt of their own iron the President states that the road will be opened to Belleville.

The President states that locomotives of the best class have been purchased from the New Jersey Locomotive Company of Paterson, and that these are only now detained on their way by the lawless proceedings at Erie.

New Locomotive Shop at Dayton, Ohio.

We observe that a company has been formed with a capital of \$100,000, for the manufacture of locomotives in Dayton. The principal stockholders are the following:

E. Thresher & Co. \$10,000; H. Doolittle \$10,000; D. Beckel \$10,000; Harshman & Winters \$10,000; L. Kinsley, of Canton, Mass., \$10,000; W. & W. P. Huffman \$10,000. The remainder of the stock is owned, as we learn, in amounts of \$5,000.

The character of the parties interested, the demand for Railway machinery, and the advantages which Dayton enjoys for its manufacture, will make this one of the leading establishments of its kind. The managers are from the Taunton Locomotive Works, of Taunton, Mass.

Manufacture of Railroad Machinery in the South

The Richmond Examiner speaks in rather discouraging terms of the progress of car and engine making in Virginia. We are pleased to know, however, that those establishments in Virginia which have founded their business upon the practical knowledge and skill of their proprietors have been in no way unfortunate in their operations, nor have their productions been such as Northern shops need be ashamed of. We know particularly of engines of a high character of design and workmanship which have been built in Virginia for the Northern Market, and one has been placed within a short time upon the Hudson River Railroad. The Examiner says:

"We descend to the small gear of Railroads, and manufacture passenger cars as strong and rugged as drays, and heavy enough unloaded for one engine to the half-dozen. We manufacture locomotives at off-hand, wholesale pace, which explode standing stock still, without the least provocation, killing only a few husbands and fathers, and instead of being ashamed of our bad handicraft we ask, with the complacency of the Irishman at the show, who got blown through the roof and was landed in a distant end of the town, thinking it a part of the performance—"what comes next?"—We talk of establishing Vulcan Iron Foundries in Richmond, and on the line of the Covington and Ohio, on semi-State account, that will spin out Railroads by the yard, and thrash locomotives and car wheels out of pig-metal like a wheat machine. Verily, we are prodigious on Railroads in Virginia, and enjoy a degree of illumination on the subject which the English and the Yankees can't hold a candle to."

Railroad Iron.

5,000 TONS T RAILS, about one-half weighing 59 lbs. per yard and the remainder 56 lbs. per yard now in bond and for sale by

2d Feb'y.

JOHN H. HICKS,
90 Beaver street,

To Railroad and Canal Co.'s, Contractors, &c.

THE undersigned would direct the attention of Chief Engineers and Contractors to the facilities they possess for supplying them with laborers, mechanics, &c. of any description, and also to inform them that they forward such men to whatever destination they may be required.

Companies or Contractors desirous of receiving steady and industrious men, will be promptly supplied at the shortest possible notice.

JOHN J. HELLING & CO.
No. 85 Greenwich street, New York.

To Contractors.



LAFAYETTE RAILROAD.

SEALED PROPOSALS will be received by the undersigned at the Engineer's Office of the Lafayette Railroad, No. 23 Spaulding's Exchange, Buffalo, N. Y., until Tuesday at 12 M. the 7th day of February next, for the grading, masonry, bridging and the entire construction of 17 miles of the Lafayette railroad from the State line of New York to Lafayette, Pa. Plans, profiles and specifications are ready for examination by parties wishing to contract.

Any further information in reference to the work, may be obtained on application to the Hon. C. S. Woodhull 133 Nassau str., New York, or of the undersigned.

E. R. BLACKWELL,
Chief Engineer.

Buffalo, January 24th, 1854.

Notice to Contractors.



CHIEF ENGINEER'S OFFICE,
Norfolk, Va., Jan. 8, 1854.

SEALED PROPOSALS will be received by the undersigned at this Office, from the 1st until the 20th day of March next, at sundown, for the "clearing" and "Graduation" on the line of the "Norfolk and Petersburg Railroad," between that portion of said road now under contract, and its terminus at Petersburg—covering a distance of about eighteen miles; also, for the "Culvert" and "Bridge" Masonry of the last section of said work.

At the same time, sealed proposals are invited for the "Abutment" Masonry of "Bridges" over the Eastern and Southern branches of Elizabeth River.

The work will be divided into sections of about three miles, and bids may be made for one or more of said sections.

The line, plan, profiles and quantities of work will be ready for examination on and after the 1st of March.

Specifications with forms of contract and proposal may be had of the undersigned after date.

Payments will be made in current funds during the progress of the work, in proportion of four-fifths of the amount due.

Of bidders personally unknown to the undersigned, evidence of their responsibility will be necessary; and of those to whom work shall be allotted, will be required bond and approved security in an amount not exceeding one-fifth of the amount of their contract, for the timely and faithful execution of the same.

The company reserves the right to accept such proposals as in their judgment will secure the prompt and faithful execution of the work according to contract, or to reject all if none are satisfactory.

The line is easy of access, the country through which it passes abundant in supplies and of a climate highly favorable for the prosecution of work at all seasons.

The work here offered for contract is of a character well worthy the consideration of the most responsible contractors.

W. MAHONE,
Chief Engineer.

January 19.

BLAKE'S PATENT FIRE-PROOF PAINT.

THIS extraordinary substance has now been tested nearly nine years, and its FIRE and WEATHER PROOF qualities are most extraordinary. Instead of the action of the weather destroying the coating as it does ordinary paints, it only serves to turn it to a perfect slate or stone, protecting whatever covered from the action of fire and weather, as will be seen by the testimony of the following persons.

BORTON GREEN, being called in the case of Blake vs. Belknap, after being duly sworn, testifies and says, that he resides in Ohio. A few days since examined a house that had been painted nearly eight years with said paint, and to all appearance, it was as perfect as the day it was put on, and could even now see distinctly the brush marks upon the surface.

NORMAN RUDD being called, and duly sworn in the above-mentioned case, says that he was owner or part owner of a large Machine Shop situate in Newmarket, N. H., that the Shop took fire and burned down, loss, \$50,000. The roof of a large Foundry near by, was covered with this paint, a Cupola upon the Foundry was not painted, it took fire and fell on to the roof and burned up, without apparently injuring the roof, except to char the boards underneath.

Amesbury, Conn., August 18th, 1851.

We were present at the burning of the Amesbury Factory, which was struck by lightning on the 10th of July last, and which, with the surrounding buildings, was painted with Blake's Ohio Fire Proof Paint, and have no doubt but that all the surrounding buildings would have been consumed had they not been painted with said paint.

JOHN TALBOT, Superintendent.
DAVID TALBOT, Agent.

Akron, Ohio, May 22d, 1850.

This may certify that we have been acquainted with Blake's Patent Fire Proof Paint for some years, and are well assured that it is really what its name indicates—fire-proof. We consider it a better fire proof than tin or zinc, and will insure buildings covered with it at a much lower premium than those covered with the above-mentioned metals.

H. K. SMITH, Sec. Summit Mut. Fire Ins. Co.
DAN'L S. LEE, Ag't of Medina Co. Mut. Ins. Co.
D. R. HADLEY, Ag't of Stark Mut. Ins. Co.
R. F. CODDING, Ag't Portage & Farm's Ins. Co.
J. A. BEALES, Ag't Portage Ins. Co.
WHEELER, LEE & CO., Col. Ins. Co.

The best evidence of the value of an article, is from the fact of persons of practical skill, having used in years past large quantities, and still continue to order largely for future use.

OFFICE OF THE PHILADELPHIA & READING RAILROAD CO.,
Philadelphia, July 16th, 1850.

Dear Sir:—This Company have been and are using BLAKE'S FIRE PROOF OHIO PAINT extensively for Bridges and Buildings. In the course of time it becomes very hard, and seems to be both fire and water proof under any ordinary circumstances. We decidedly prefer it for the purposes named above, to any paint we have hitherto used, as it costs less and is much more durable.

JOHN TUCKER, President.

ENGINEER'S DEPARTMENT, P. R. R. Co.,
Philadelphia, Feb. 17th, 1850.

Dear Sir:—Having used Blake's Fire Proof Paint on this Road for two years past, I am sufficiently satisfied with its superiority to continue its application to all the structures and cars on the line of the Penna. railroad. Yours, very respectfully,

J. EDGAR THOMPSON, Chief Engineer.

OFFICE PENNA. R. R., April 20th, 1852.

Dear Sir:—Ship immediately the fifty barrels yet undelivered of our order for one hundred barrels Blake's Patent Fire Proof Paint, dated Feb. 15th, 1851, to care of Strickland Kneass, Esq., Altoona, and care of John Coville, Esq., Pittsburg.

Yours truly,

J. EDGAR THOMPSON.

GEORGIA RAILROAD, Augusta, Ga., November 27th, 1851.

Dear Sir:—Please furnish us with (30) thirty bbls. Blake's Fire Proof Paint, Chocolate Color. We have been using Blake's Fire Proof upon Freight Cars and Buildings for the last three years, and it gives me pleasure to state that we have found it both more economical and durable than any other kind of paint.

F. C. ARMS, Gen. Supt.

I fully concur in the above recommendation.

JESSE OSMOND, Supt. Car Factory.

Portland, April 11th, 1851.

Dear Sir:—I have requested Mr. Emory, Ag't and Supt. of the Y. & C. Railroad, to give you an order for twenty bbls. of Blake's Ohio Fire Proof Paint, for the use of this Road; and I take pleasure in adding, that I regard it as an article superior to any other introduced into the market and use, as also more economical in price, for coating Dumps, Cars, and every other material of wood or metal, exposed either to fire or weather; and I can cheerfully concur in recommending it accordingly for most uses and roofs generally. Please forward the amount of Mr. Emory's order by the earliest conveyance.

F. O. J. SMITH, President York and Cumberland R. R.

CAMDEN & AMBOY RAILROAD OFFICE,
Bordentown, March 4th, 1851.

In reply to your inquiry as to your opinion of Blake's Ohio Fire Proof Paint, I would state that we have used considerable of it during the last two years, and consider it a first rate article, and hereafter shall prefer it to any other paint, for Buildings, Bridges and Cars outside.

R. S. VAN RANSELER, Superintendent.

ENG'S OFFICE, BALTIMORE & OHIO R. R.

Dear Sir:—Being satisfied with the testimonials you here produced, that Blake's Fire Proof Paint which you have for sale is a valuable article for the purposes which they mentioned, I now give you an order for 50 barrels, of 350 lbs. or thereabouts, of the paint; 25 bbls. of Black and 25 bbls. Chocolate color. Consign the paint to Jas. B. Jordan, Mount Clear Depot, Baltimore.

B. H. LATROBE, Chief Engineer.

OFFICE OF MASTER OF ROAD, BALTIMORE & OHIO R. R.,
Baltimore, Nov. 3d, 1851.

Dear Sir:—After using "Blake's Patent Ohio Fire Proof Paint" for the last year, I have concluded to give you an additional order for 40 bbls. I feel a pleasure in saying that I consider it the best material for covering Wood, Brick, or Iron, now in use.

Respectfully your Obedt. Servant,
W. BOLLMAN, Master of Road.

SUPERINT'T OFFICE, RICHMOND & FREDERICKSBURG R. R.,
November 6th, 1851.

Dear Sir:—In reply to your inquiry in reference to our satisfaction with Blake's Patent Paint, sold us last Spring, I would say that we are so well pleased with it that I should like to have you ship us seven bbls. more of the Chocolate at your earliest convenience. Yours, &c.

THOS. SHARP, Supt. R. F. and P. R. R.

JUNCTION HANOVER COUNTY, November 1st, 1851.
The Virginia Central Railroad Co. have been and are using Blake's Fire Proof Ohio Paint extensively for Bridges, Car-tops, &c. We decidedly prefer it for the purposes named above to any paint we have ever used, as it costs less and is much more durable.

C. R. MASON, Supt.

PHILAD'A. WILMINGTON & BALTIMORE R. R.,
Baltimore, Sept. 10th, 1851.

I have used Blake's Ohio Paint for four years, and have found it to be an article of great economy and value, and calculated to supersede for most purposes all other paints, for Public Buildings and Private Residences.

J. R. TRIMBLE, General Agent.

ATLANTA, December 10th, 1851.

Dear Sir:—Please send me for the Atlanta and Lagrange Railroad Co., 20 bbls. Blake's Fire Proof Paint, Chocolate Color. I have used the paint for various purposes, and am well satisfied that it makes a good and durable coating.

L. P. GRANT, Eng. & Supt. A. & L. Railroad.

SUPERINT'T'S OFFICE, S. W. Railroad,
Macon, December 5th, 1851.

Dear Sir:—Please ship us, care of Central Railroad Agent, Savannah, 2 bbls. Blake's Fire Proof Paint.

I have used on the Central Railroad, and on this road a considerable quantity of the above Paint, in the last four years, and have no hesitation in pronouncing it the best ageing for wood that I know of, as a protection from the weather or fire.

GEO. W. ADAMS, Supt.

MACON & WESTERN R. R., Macon, Dec. 6th, 1851.

Dear Sir:—You will please furnish for this Company 8 bbls. Blake's Patent Fire Proof Paint, (Black color,) and 4 bbls. Chocolate color—in all 12 bbls. We have heretofore used Blake's Fire Proof Paint on Freight Cars and Buildings with much satisfaction, considering it both economical and durable.

EMERSON FOOTE, Supt.

MONTGOMERY & W. POINT R. R. Co.,
Montgomery, January 21st, 1852.

We have been using Blake's Patent Ohio Fire Proof Paint for several years for painting Cars and Buildings, and have been highly pleased with it. You may send us twenty barrels of the paint; fifteen of the Chocolate color and five of the Slate color.

Respectfully,
SAM'L G. JONES, Engineer & Superintendent.

ALL ORDERS ADDRESSED TO

WILLIAM BLAKE, Patentee.

119 Pearl Street, New York.

To Locomotive Engine Builders and Engineers.

THE Proprietors offer for rent for a term of years, with immediate possession, the splendid property, known as the BELLEVILLE IRON WORKS, situated on the Mississippi, directly opposite the City of New Orleans, and within 300 feet of the River, with which it is connected by fine wharves and landings.

The buildings are of brick, with slated roofs, and were erected in 1848 at a very heavy expense; are of a most substantial and durable character and admirably fitted for a Foundry and Machine Shops, or almost any mechanical business. They now contain a new and powerful Engine and Boiler and sufficient machinery, say, planing machines—lathes—boring machines, blacksmith's tools, &c., &c., to employ 100 mechanics, and could be put in working order in a few days. The Buildings cover a lot 300 feet square and are amply large to receive the necessary machinery for the use of 800 to 1000 workmen.

The terminus and depot of the New Orleans,

Opelousas and Great Western Railroad is situated about 300 yards from the above property, which could be availed of to great advantage for the manufacture of Locomotives and Railroad work, generally as well as Steam Engines, Sugar Mills, and other descriptions of Machinery.

There are no Shops in New Orleans for the manufacture of Railroad Machinery, and as the Railroad Companies now organized in that city contemplate the construction of over 1000 miles of road,—a large part of which is already under contract,—the property now offered for lease offers a most eligible opportunity for parties desiring to contract to furnish the Engines and Machinery,—for those roads. Responsible contractors with their works on the spot would have an advantage over Northern Workshops in contracting for the Work of the Railroads terminating in New Orleans.

The Establishment and prospect of remunerating work to be secured immediately are worthy the attention of manufacturers and Engineers generally.

Applications from responsible parties will be

promptly attended to, and to satisfactory parties the proprietors of the Works can offer favorable terms and arrangements.

Letters may be addressed to

R. B. SUMNER,

No. 61 Camp Street,
New Orleans;

and further information may be had by applying to Messrs. BARSTOW & POPE, Pine Street, New York.

Railroad Iron.

1250 Tons Erie Pattern Guest and Co's make, weighing 57½ lbs. per yard, to be shipped from Wales in July and August, for this port—*for sale by*

BOORMAN, JOHNSTON & CO.,
June 9, 1853. 50 Broadway, New York.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
69 Beaver st, N. Y.,

September, 1850.

Valuable

Engineering and Mechanical Works,

IMPORTED and FOR SALE by
JOHN WILEY, 167 Broadway.

| | |
|---|---------|
| DEMPSEY'S PRACTICAL RAILWAY ENGINEER. 1 vol. 4to, with 50 Engravings, bound in half Morocco. | \$11.00 |
| SCOTT'S ENGINEERS' AND MACHINISTS' ASSISTANT, 2 vols. Quarto. | 20.00 |
| TREDGOLD on the LOCOMOTIVE ENGINE, half calf. | 15.00 |
| " on the MARINE ENGINE, half calf. | 24.00 |
| " on the STATIONARY ENGINE, &c., half calf. | 24.00 |
| TREATISE on the STEAM ENGINE by the Artizan Club. | 6.00 |
| WEALE'S THEORY, PRACTICE and ARCHITECTURE of BRIDGES, 3 large vols., half bound. | 25.00 |
| " SUPPLEMENTARY VOL. (just published), half bound. | 14.00 |
| TRAUTWINE on RAILROAD CURVES, turk. | 1.00 |
| " on EMBANKMENTS and EXCAVATIONS. | 1.00 |
| WILMES' HANDBOOK of PLAIN and ORNAMENTAL MAPPING, and Engineering Drawing, for Civil and Mechanical Engineers. | 7.50 |
| WOOD'S PRACTICAL TREATISE on RAILROADS, 8vo. | 5.00 |
| RYDE'S TEXT BOOK for the USE of ARCHITECTS, ENGINEERS, SURVEYERS, &c. 1 vol Royal 8vo. | 8.50 |
| GREGORY'S MATHEMATICS for PRACTICAL MEN. 8vo. | 6.00 |
| BARLOW on the STRENGTH of MATERIALS and on CONSTRUCTION. | 4.50 |
| LARDNER on the STEAM ENGINE. New Edition. | 2'00 |
| SCRIBNER'S ENGINEER'S, SURVEYOR'S and CONTRACTOR'S POCKET TABLE BOOK. | 1.50 |
| SCRIBNER'S ENGINEER'S and MECHANIC'S COMPANION. | 1.50 |
| BUCK ON OBLIQUE BRIDGES. Illustrated with Plans, &c. | 4.00 |
| EXAMPLES of RAILWAY MAKING. With PRACTICAL ILLUSTRATIONS. | 3.50 |
| SIMM'S on LEVELLING and SETTING OUT RAILWAY CURVES. 8vo. | 2.25 |
| SIMM'S on MATHEMATICAL INSTRUMENTS, 8vo. | 2.25 |
| HAUPT on BRIDGE CONSTRUCTION. 8vo. | 3.00 |
| QUESTED'S TREATISE on RAILWAY SURVEYING and LEVELLING. 8vo. | 1.75 |
| Together with an extensive assortment of Books in every department of science. | |

LAWRENCE SCIENTIFIC SCHOOL, Harvard University.

THE next Term of this Institution will open on the second day of March, 1854, and continue twenty weeks.

Instruction by Recitations, Lectures and Practical Exercises, according to the nature of the Study, will be given in:

| | |
|---|------------------|
| Astronomy. | by Messrs. Bond. |
| Botany. | " Prof. Gray. |
| Chemistry, analytical and practical. | " " Horsford. |
| Comparative Anatomy and Physiology. | " " Wyman. |
| Engineering. | " " Eustis. |
| Mathematics. | " " Pierce. |
| Mineralogy. | " " Cooke. |
| Physics. | " " Lovering. |
| Zoology and Geology. | " " Agassiz. |

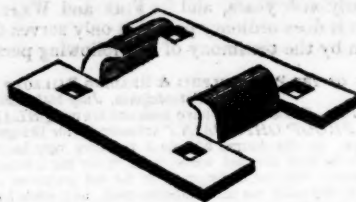
For further information concerning the School application may be made to Prof. E. N. Horsford, Dean of the Faculty.

Cambridge, Mass., January 1854.

NEW YORK

Wrought Iron Railroad Chair Company,

Office, 38 Exchange Place, New York.
A. B. LANSING, President.



THIS Company is prepared to receive orders for the manufacture of Wrought Iron Railroad Chairs of the best material, on a new and superior model, and by improved patented machinery.

The thickness of the Lips of the Chair increases through the bend, where the greatest strength is required, and diminishes towards the edge;—so that a less weight of metal may be used and a strength acquired equal, if not superior, to that of a heavier Chair of uniform thickness.

GALENA & CHICAGO UNION R. R. CO. }
Secretary's office, Chicago, Jan'y 21st, 1854. }

Notice to Stockholders.

NOTICE is hereby given to the Stockholders of the GALENA & CHICAGO UNION R. R. CO., that a dividend of ten per cent. on the capital stock paid in (entitled to dividends) for the six months ending January 31st 1854, has been declared.

The Income of the road having been used for construction purposes, the dividend will be payable, on and after the first day of February next at the office of the Company, in dividend certificates, redeemable at the pleasure of the holder in full paid Consolidated Stock of the Company when presented at this office in sums of One hundred dollars.

By order of the Board of Directors,
W. M. LARRABEE, Secretary.

FULTON CAR WORKS, CINCINNATI, OHIO.

WE respectfully call the attention of Railroad Companies and Contractors in the West and South to our establishment. Our facilities for manufacturing are extensive, our work is made from the best material the country affords, and of the most superior workmanship. We are prepared to execute to order on short notice Passenger Cars of the most approved description and elegant finish; Baggage, Freight, Cattle and Gravel Cars, also Crank and Lever Hand Cars, Trucks, and Railroad work generally.

Washburn Car Wheels.

Having secured the exclusive right to make and sell this celebrated wheel in Cincinnati, Covington and Newport, we are prepared to furnish them in any quantity, either fitted with axles or separate. These wheels are made of the best of iron, mixed in most approved manner.

Cincinnati, Ohio, January 18th, 1854.

KECK & HUBBARD.

Rail Road Letting.



PROPOSALS will be received at the Office of the Company in the City of Evansville, Indiana, until 6 o'clock, P. M., of Wednesday, 15th day of February, 1854, for the Grubbing, Grading and Bridging of that part of the 1st Division of the

EVANSVILLE, INDIANAPOLIS, AND CLEVELAND STRAIGHT-LINE RAIL ROAD,

Extending from Evansville to the Crossing of the Ohio and Mississippi Rail Road, in Daviess County, a distance of fifty-four miles.

The work will be divided into sections of about one mile each, and proposals will be received for one or more sections, or for the whole line.

Maps, Profiles and Specifications will be ready for the examination of bidders on and after the 1st of February, and all necessary information given on application to W. C. MOORE, Chief Engineer.

O. H. SMITH, PRESIDENT,

W. CARPENTER, VICE PRES.

Evansville, Jan. 2, 1854.

NEW YORK & ERIE RAILROAD.

NEW YORK, December 31, 1853.

THE NEW YORK & ERIE RAILROAD COMPANY, have for sale on favorable terms, the following Schedule of Rolling Stock of the Gauge of FOUR FEET, TEN INCHES,

all of which can be delivered immediately.

It can be seen at Paterson, and is the entire stock of the Union Railroad, the Paterson & Ramapo Railroad, and the Paterson & Hudson River Railroad.

Reasonable credit will be given on the above, on satisfactory security.

CHA'S MINOT, Sup't.

SCHEDULE.

| ENGINES. | MAKER. | CYLINDER. | STROKE. | WHEEL. | CONDITION. |
|---------------|-------------------------------|----------------------------------|--------------------------------|-------------------|---------------------------------|
| R. L. Colt... | New Jersey Locomotive Co..... | 16 | 20 | 5 feet | Good. |
| Union..... | Rogers, Ketchum, & Grosvenor. | 15 | 20 | 6 " | Good. |
| New York... | do. do. | 14 $\frac{1}{2}$ | 18 | 6 " | Good. |
| Ramapo..... | do. do. | 14 $\frac{1}{2}$ | 18 | 6 " | Wants painting & small repairs. |
| Passaic..... | do. do. | 14 $\frac{1}{2}$ | 22 | 5 $\frac{1}{2}$ " | do. do. do. |
| Paterson.... | do. do. | 12 | 22 | 5 " | do. do. do. |
| Whistler.... | Made in Baltimore | 11 | 16 | 5 " | Wants much repairs. |
| McNeil | Made in Liverpool | 9 $\frac{1}{2}$ | 16 | 4 " | In bad order. |
| CARS. | DESCRIPTION. | BY WHOM MADE. | | CONDITION. | |
| 2..... | Passenger, 8 wheels.... | Cummings & James, Jersey City. | Good. | | |
| 2..... | do. 8 do. | Wm. Cummings, Jersey City..... | Good, but wants painting. | | |
| 2..... | do. 8 do. | Tracy & Fales, Hartford..... | Very good. | | |
| 4..... | do. 8 do. | Springfield Car & Engine Co..... | Good, but three want painting. | | |
| 2..... | do. 8 do. | A. T. Pearce, Norwich..... | Good. | | |
| 2..... | do. 8 do. | Eaton & Gilbert, Troy..... | Want repairs. | | |
| 1..... | do. 8 do. | New York & Erie R. R. Co. | Good, new. | | |
| 1..... | Baggage, 8 do. | do. do. | Good. | | |
| 6..... | do. 8 do. | Unknown | Want small repairs. | | |
| 1..... | do. 6 do. | do. | do. do. | | |
| 8..... | Box freight, 8 do. | New York & Erie R. R. Co. | Good. | | |
| 18..... | do. 4 do. | Unknown | Want small repairs. | | |
| 16..... | Platform, 8 do. | New York & Erie R. R. Co. | Good. | | |
| 9..... | do. 4 do. | Unknown | Want considerable repairs. | | |
| 1..... | do. 6 do. | do. | do. do. do. | | |
| 2..... | do. 8 do. | do. | do. do. do. | | |